



Health Technology Assessment International

An International Society for the Promotion of Health Technology Assessment

Hospital Based Health Technology Assessment World-Wide Survey

Hospital Based Health Technology Assessment Sub-Interest Group



**Hospital Based Health Technology Assessment
World-Wide Survey**

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Interest Sub-Group Hospital Based HTA

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1. Purpose and structure of the document

The purpose of this document is to present final results of a survey performed within the Health Technology Assessment International (HTAi) Interest Sub-Group (ISG) “Hospital Based Health Technology Assessment” (HBHTA) during the year 2007.

The document is structured as follows. In the first section, origins, mission, organization, functions and structure of the ISG are briefly presented. Then, the objectives of the survey are outlined in details. The subsequent paragraph aims at clarifying the scientific background of the research and the conceptual framework for the analysis is presented.

The fifth section is dedicated to the description of the research methodology with specific attention devoted to sampling and survey’s questionnaire structure.

The results of the survey are presented in the sixth paragraph and they are articulated in four different sub-sections: compliance; organizational models; competence and activities, training and external environment. Last section is dedicated to some conclusions and a brief discussion.

2. Hospital Based HTA Interest Sub-Group

During the year 2006 an Interest Sub-Group (ISG) dedicated to the application of HTA logic and tools at hospital level has been established within HTAi. The Sub group has been labelled “Hospital Based HTA” (HBHTA).

The purpose of each Sub-group is to serve as a forum for focused discussions among HTAi’s members with similar HTA-related interests.

So far, an ISG is a permanent international table of discussion on HTA themes that can be shared by professionals and researchers all over the world. An ISG can also contribute to the cultural enrichment of HTAi members in specific topic being able to provide a crucial impact on HTA practice at an operational level.

HBHTA ISG’s mission is to gather professionals involved in the use of HTA logic at an organization level in order to support both managerial and clinical decision-making processes. HBHTA ISG’s members have firstly met in Adelaide during HTAi 2006 Annual Meeting. During the first meeting participating members were able to share their perspective in the use of HTA logic within health care organizations. The meeting ended up with the definition of priorities for future joint actions and the mission of the ISG was shared among members.

In outlining future activities, a crucial issue has emerged. Even though transferring HTA from a macro level to a meso level is quite a common process, a study on how HTA activities should be introduced and implemented within hospitals and other health care organizations, was still not available. Therefore, the ISG has hold as a priority to investigate different existing approaches on the application of HTA logic and tools at an hospital level in different health care systems.

After Adelaide’s meeting a world-wide survey has been launched within ISG’s members in order to investigate this emerging phenomenon. Preliminary results from this survey were presented during the HTAi 2007 Annual Meeting in Barcelona and the group agreed to proceed to the completion of the survey. A complete list of ISG’s members is attached to this document (see Appendix 1).



3. Objectives of the survey

The main purpose of the world wide survey on HBHTA is to investigate the kind of application of HTA logic, methods and tools within hospitals and other health care organizations in order to support managerial decision making as well as clinical practice.

The working group firstly intended to provide a picture of different organizational approaches followed in different institutional contexts designed explicitly to apply HTA within those organizations directly involved in health care delivery.

4. Background

HTA has been used worldwide in order to inform decision-making in health systems at different levels by producing information on the clinical, economic, organizational, social and ethical impacts of health technologies (Battista, 2006).

HTA has traditionally been focusing on informing policy-making at a macro level. Since the '80s, health systems in developed countries established agencies devoted to produce scientific information to address health-care policies. These agencies, networking in INAHTA, operate alternatively at a national level (e.g. SBU, in Sweden) or at a region/province level (e.g. CAHTA, in Cataluña). HTA methods and tools were developed to assess health technologies and their impact in health care systems as a whole. More recently, an "organizational" perspective for the application of HTA principles and methods has emerged.

Even if the decentralization of the application of HTA approach in hospitals is now considered as an emerging phenomenon it is important to consider that one of the first HTA agencies in Europe has been established at an "hospital" level. The CEDIT (Comité d'Evaluation et de Diffusion des Innovations Technologiques), established in 1982, probably the first example of HTA Agency in Europe, is an hospital-based agency for the assessment of medical technology.

The CEDIT, similarly to many other HTA units now active all around the world in hospitals, is responsible for formulating advice for the Director General of the Assistance Publique-Hôpitaux de Paris (AP-HP) on the opportunity, extent and way of diffusion of technological innovations in AP-HP hospitals (Baffert et alii., 2005).

Later on, since nineties, international literature has reported some examples on how HTA methods have been experimented, as a tool for decision-making at an "organisational" level (Marshall and Menon, 1990; Luce and Brown, 1995; Battista et al. 2003; McGregor and Brophy, 2005; Ehelers et alii, 2006). Over the last few years, an increasing need has emerged to transfer HTA's methodology to support managerial decision making at an hospital level, also supporting the definition of a "technological strategy" for HCOs (Cicchetti, 2003).

This tendency is not the result of any reduced role for HTA as a support to policy decision making (macro level), but it is related to the increasing consciousness that health technologies' value should be judged in connection with specific organizational contexts. The diffusion of the use of HTA logic in hospitals and other HCOs, can be considered as a way for hospital managers to respond to three different environmental "pressures".

The first concerns the increasing "pressure" that health authorities are exercising on individual health care organisations to improve the level of efficiency and effectiveness (micro-economic efficiency) as a key to improve the efficiency of the entire system (macro-economic efficiency). The pressure to create the abovementioned micro-economic efficiency has increased the independence but also the responsibility of peripheral health care organizations. Hospitals are now commonly operating under budget constraints and in many countries DRGs-like payment mechanisms are applied. This evolution has led to a transfer of previously exclusively central



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competences (e.g. ministries of health, departments of health) to peripheral levels (hospitals and other HCOs). Decisions related to health technologies (adoption, investment, etc.) are more and more performed at an organizational level.

The second is related to the progressive acknowledgement of the relevance of the "context" factor. Opportunities and advantages that can be drawn from the use of health technologies in the medical field (elsewhere labelled as "value"), vary depending on resources and competences availability in each health care organisation. For this reason if decision should be taken at an organizational level, evidences and data should be also collected and analysed in the organizational context.

A third environmental pressure is related to the diffusion of evidence based medicine culture. Policy makers, hospital managers, clinicians and other professionals are pushed to bring timely scientific evidences into clinical practice and into organizational processes. A recent stream of literature in health service research points out the relevance of organizational contexts in letting evidence be transposed into real-world clinical practice (Bero et alii., 1998; Rosen and Gabbey, 1999). We can assume that the development of an HTA function at an organizational level could help overcome what has been labelled 'organizational gap' (Dopson et alii, 2005). Presenting the Montreal University Hospital Consortium case study, McGregor and Brophy (2005) suggested that the implementation of an in-house HTA unit can be useful to create a positive organizational context to facilitate the use of scientific evidence to support both clinical practice and management decision-making in hospitals.

As a result of this evolution, health care managers are more and more interested in identifying some decision-making tools and technical methodologies to support decisions regarding relevant matters such as the acquisition and the allocation of technological resources. The adoption of such HTA perspective would provide HCOs not only with a tool for management but also with a solution for the implementation of a clinical governance framework as a whole. This new perspective screening the use of the HTA principles, methodologies and tools is being more and more labelled as hospital-based HTA (HB-HTA) (Catananti et al., 2005).

Experiences of HB-HTA has been recently reported in literature from different countries such as Canada (Mc Gregor & Brophy, 2005), Denmark (Ehlers, 2006) and Italy (Catananti et al. 2005). Many other case studies have been reported during recent annual meetings of the Health Technology Assessment International both in Rome (in 2005) and Adelaide (2006) from Andalusia (Briones et al., 2005), Austria (Wild, 2005), Sweden (Rehnqvist, 2005), France (Baffert et al. 2005), Switzerland (Wasserfallen, 2005; Zuellig, 2005) and Australia (Maddern, 2005).

4.1 The Conceptual Model

On the base of examples and case studies reviewed within the ISG during meetings held in Adelaide (2006) and Barcelona (2007) the ISG was able to acknowledge a significantly varied scenario of applications of HTA at an HCO level.

HTA logic seems to be applicable in different fashions with many different organizational solutions depending on institutional and other socio-economic factors characterizing the health care system in different countries.

On the base of a collective reflection the group agreed to adopt a conceptual model that intends to reduce the variability of organizational solutions for hospital based HTA that can be found in real world. The model identifies four different groups, depending on (i) the focus of the action and on (ii) the level of complexity of the organizational solution implemented for performing HTA processes within hospitals. The performance of HTA related activities in a hospital can be oriented to produce evidence for managerial decision making (e.g. decision of investment) and/or to support



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effective clinical practice. These functions could be then performed by individual professionals or complex and multiprofessional organizational units. Considering the two variables, “focus of action” and “organizational complexity” four different models for HB-HTA have been conceptualized.

Figure 1: HTA organizational Models

		Focus of Action	
		Clinical Practice	Managerial decision making
Organizational Complexity	High (Team-group-unit)	(Q3) ‘Internal Committee’ Model	(Q4) ‘HTA Unit’ model
	Low (Individual)	(Q1) ‘Ambassador’ Model	(Q2) ‘Mini-HTA’ Model

The HTA models are:

- **Ambassador Model (Q1):** clinicians recognized as ‘opinion leaders’ play the role of ambassadors of the HTA “message” inside the HCOs. They may not take part to assessments but play a key role in results diffusion within hospitals. In this quadrant fits the case of the Swedish ambassadors (Rehnqvist, 2005).
- **Mini HTA (Q2) :** it is the case of Danish mini-HTA, in which single professionals participate in the assessment process collecting data at organizational level to inform decision makers at an higher level (Ehlers et al., 2006).
- **Internal Committee (Q3):** evidence is produced by multidisciplinary groups (called internal committees) representing different perspectives and taking the responsibility of reviewing evidences to issue recommendations useful hospital-wide. Usually documents are produced on a peer-to-peer basis by professionals, who rarely work full time on HTA. The model is commonly used in HMO in the U.S.A. and in some Canadian hospitals (Menon & Marshall, 1990).
- **HTA Unit (Q4):** formal organizational structure based on specialized HTA personnel working on a full time basis inside the Unit. This model represents the highest degree of structure for hospital HTA (McGregor & Brobhy, 2005; Catananti et al., 2005).

5. Methods

Different approaches adopted in Hospital Based HTA are currently implemented at international level. In order to identify and classify the existing HTA approaches at health care organization level (tools, methods, organizational models), a literature review was performed.

Afterwards, the **Hospital Based HTA World Wide Survey** was developed in the context of HTAi Hospital Based HTA Interest Sub Group activities .



5.1 Sampling

The survey was submitted to the population of 64 members (individuals) of the HB-HTA Interest Sub-Group active in 50 different health care organizations.

The list of responders is reported in Appendix 2.

5.2 Questionnaire Template

The **Hospital Based HTA World Wide Survey** was articulated in the following sections:

- General information:
 - identification and contact information of the responders;
 - organization profile;
 - delivering settings of the organization.
- Part I: Description of Health Care Organization:
 - mission of the HTA activities (to inform clinical practice and/or produce information to support managerial decision making);
 - who performs HTA activities;
 - for whom HTA activities are performed;
 - formal and informal link with external organizations;
- Part II: Description of HTA activities within the HCO:
 - health technologies assessed;
 - HTA dimensions assessed (efficiency, efficacy, safety, etc.);
 - priority criteria;
 - stakeholders role.
- Part III: Description of the outputs:
 - kinds of produced reports;
 - tools of reports' dissemination.
- Part IV: HTA Training activities:
 - participation in HTA training activities;
 - organization of HTA training activities.

The survey was performed from April 29th, 2007 to May 6th, 2008.

A descriptive analysis of gathered data was performed and is presented in the following section. The questionnaire was structured to capture common characteristics among responders in terms of organizational structures, processes, competences and outputs.

The organizational profile of each responding member was classified in one of the four HTA models described above in the “Conceptual Model” section.



6. Results

Results refer to data available on May 6th 2008.

6.1 SECTION I : Description of responding institutions

In this section of the document the characteristics of the responder institutions are described

Table 1. Answering rate by country

	Country	Responders		HB-HTA ISG members	Responders/ Members
		No.	% on total	No.	
Europe	Austria	1	3%	1	100%
	Denmark	3	9%	3	100%
	France	1	3%	2	50%
	Germany	1	3%	1	100%
	Italy	10	30%	17	59%
	Poland	0	0	1	0%
	Spain	1	3%	1	100%
	Sweden	2	6%	2	100%
	Switzerland	2	6%	2	100%
	The Netherlands	1	3%	1	100%
North America	Canada	4	12%	9	44%
	USA	1	3%	1	100%
South America	Argentina	0	0	1	0%
	Brazil	1	3%	2	50%
	Colombia	1	3%	2	50%
	Mexico	1	3%	1	100%
Oceania	Australia	2	6%	2	100%
	New Zealand	1	3%	1	100%
Total		33	100%	50	66%

According to the previous table, 67% (22 out of 33) of the responder institutions are set in Europe. Results show a major participation of institutions set in Italy (10 out of 22) .

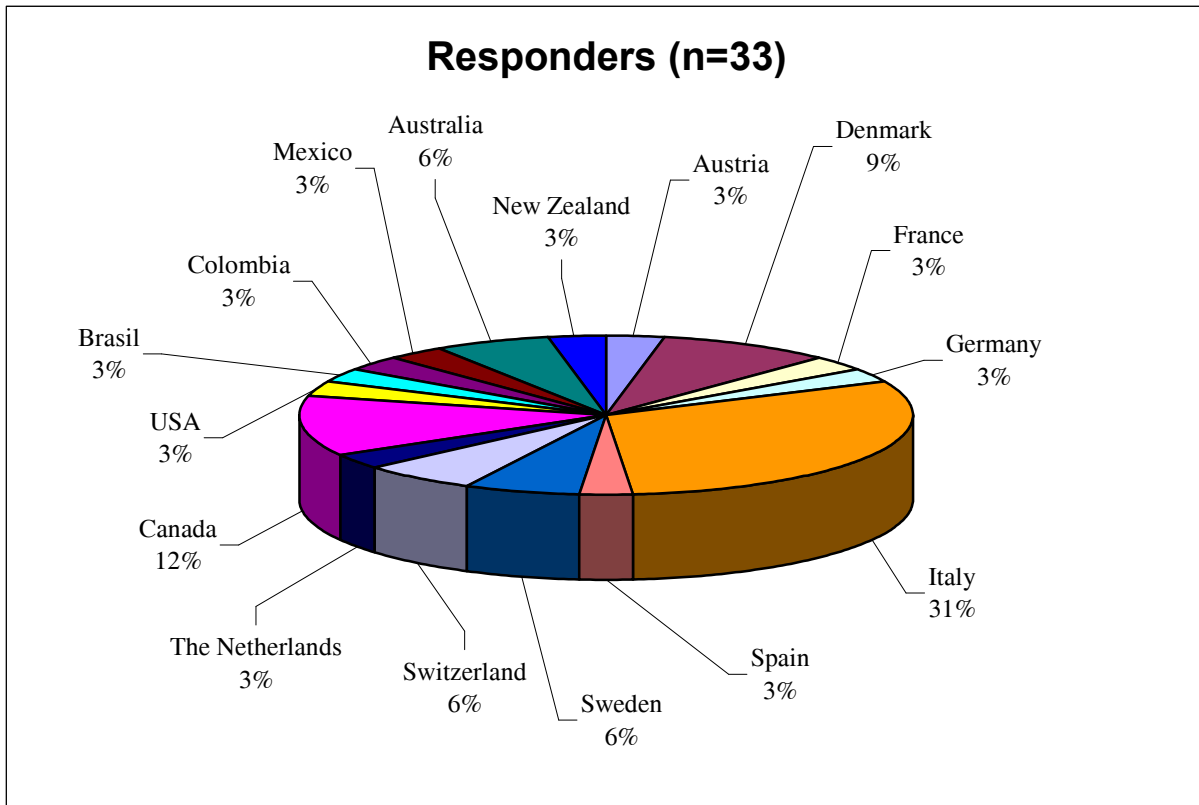
The distribution of responding institutions by geographical area are: 15% in North America (Canada 12% and USA 3%), 9% in South America and 9% in Oceania

The overall response rate to the survey is 66% while institutions located in Austria, Denmark, Germany, Spain, Sweden, and The Netherlands, USA, Mexico, Australia and New Zealand show a 100% answering rate.



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Graph 1. Country of responders



Organization profile

The organization profile of the institutions was investigated. A unique profile for each institution was identified by the authors for the 16 cases where different profile elements were reported. In particular, when (Academy/University OR Research Institution) AND Teaching Hospital were both answered, **Teaching Hospital** was selected by the authors.

Table 2. Organization profile

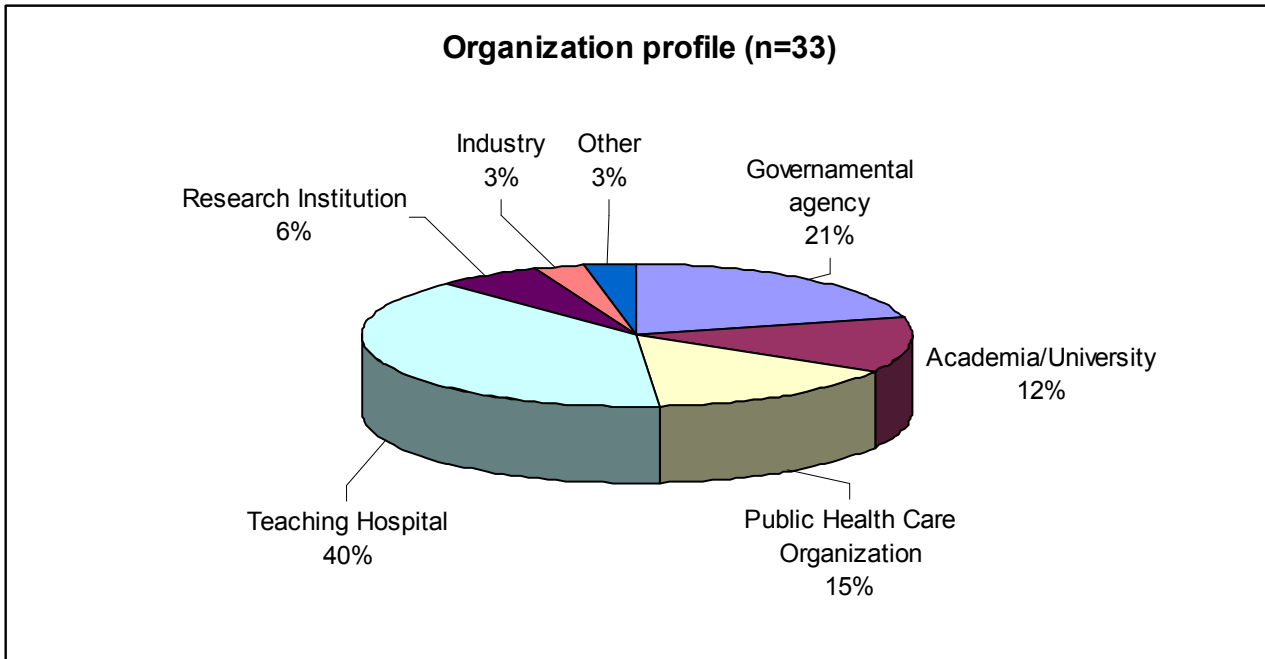
Organization profile	No.	% on 33
Governmental agency	7	21.2
HTA Body		
Academia/University	4	12.1
Public Health Care Organization	5	15.2
Private Health Care Organization		
Teaching Hospital	13	39.4
Research Institution	2	6.1
Professional Association		
Industry	1	3.0
Other	1	3.0
Total	33	100

Hospital Based HTA is usually performed in Teaching Hospitals (39.4%), Governmental Agencies (21.2%) and Public Health Care Organizations. While autonomous HTA Bodies, Private Health Care Organizations and Professional Associations do not perform HB-HTA. The answer “other” has been specified as health surveillance agency.



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Graph 2. Organization profile



Delivery setting

The delivery setting of health care organizations affect the way HTA activities are performed. Data related to the Hospital Based HTA ISG’s organizations delivery setting are showed in Table3.

Table 3. Delivery settings

Delivery setting	No.	% on 33
Hospital Care Network	11	33.3
Hospital	21	63.6
Practitioner Office	4	12.1
Ambulatory Care Clinic	12	36.4
Behavioral Health	3	9.1
Home Care	3	9.1
Nursing Home	2	6.1
Subacute Care Setting	7	21.2
Rehabilitation Setting	10	30.3
Hospice	4	12.1
Clinical Laboratory	10	30.3
Other	2	6.1
Not specified	8	24.2
Total	97	

Hospital (63.6% of HB-HTA ISG members) is the prevailing setting followed by Ambulatory Care Clinic (36.4%) and Hospital Care Network (33.3%).

One of the two answers “other” was specified as “Health surveillance”.

For further analysis the delivery settings were aggregated according to the following categories:

- Hospital: including Hospital and Hospital Care Network;
- Outpatient setting: including Practitioner Office, Ambulatory Care Clinic, Behavioral Health and Clinic Laboratory;
- Long Term Care (LTC): including Home Care, Nursing Home, Subacute Care Setting, Rehabilitation Setting, and Hospice.



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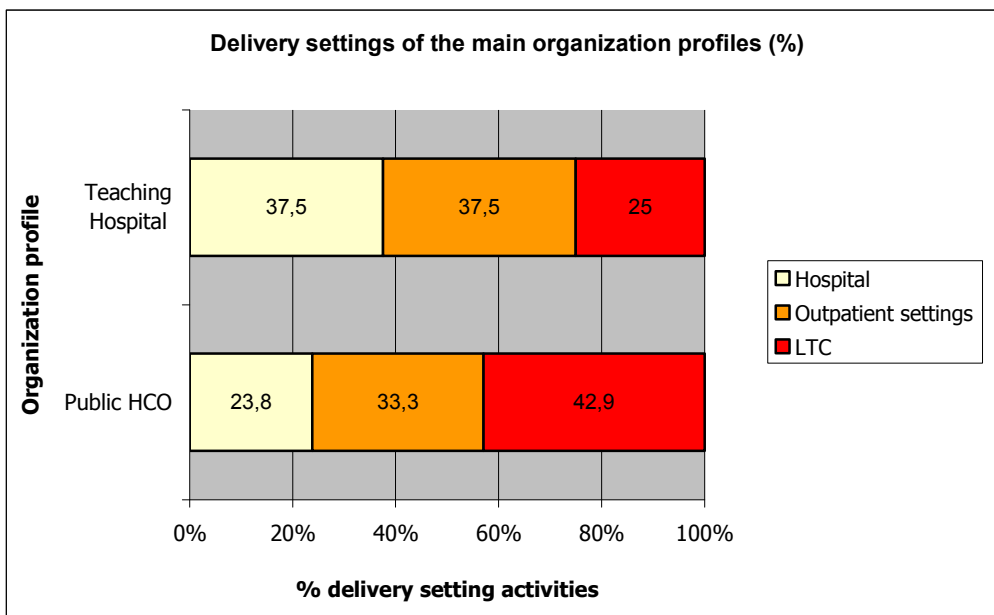
Table 4 shows the delivery settings of the two prevailing organization profiles (Teaching Hospital and Public Health Care Organization).

Table 4. Prevailing Organization Profiles and Delivery settings

Delivery settings	Organization profiles	
	Public HCO	Teaching Hospital
Hospital	5	18
Outpatient settings	7	18
Long Term Care (LTC)	9	12
Total	21	48

Teaching Hospitals operate mainly at inpatient and outpatient level, committing themselves to LTC in 25% of cases. On the contrary Public HCOs are more focused on LTC (43%) and Outpatient Settings (33%), while Hospital Care accounts for a 24%.

Graph 3. Delivery settings and main organization profiles





6.2 SECTION II: HTA models

HTA organizational models in connection with organization profile and HTA mission was studied. Most institutions implemented an HTA function within their own organization (30 out of 33, 90.9%)

HTA activity has been defined as a systematic production of information related to an health technology's introduction/use/diffusion. The main object of the HTA activity is to produce information to support decision-making processes. Scientific information comes from the multidisciplinary evaluation of properties, effects, and clinical, social, ethical and economic implications of health care technology.

HTA is conducted by interdisciplinary groups, whose members are partially or totally dedicated to that activity.

All this information has been classified according to the HTA organizational models described in "Background" section. In table 5 the distribution of HTA organizational models per country is summarized.

Out of 33 responders, data are available for 30 organizations. In fact in 2 cases no data related to the model was provided and in 1 case all four options were selected.

Where both 'professional responsibility' and 'internal committee' options were selected, the responders were classified as 'internal committee'. In one case that was specified 'HTA unit on demand', it was considered as "HTA unit".

Table 5. HTA organizational models and Country of responders

Country	Hospital Based HTA : Four Models				Total
	Ambassador model	Mini HTA	Internal Committee	HTA unit	
Australia	0	0	0	2	2
Austria	0	0	0	1	1
Brasil	0	0	0	0	0
Canada	0	0	0	3	3
Colombia	1	0	0	0	1
Denmark	0	0	0	3	3
France	0	0	0	1	1
Germany	0	0	1	0	1
Italy	2	0	2	5	9
Mexico	0	0	1	0	1
New Zealand	0	0	1	0	1
Spain	0	0	1	0	1
Sweden	0	1	0	1	2
Switzerland	0	0	0	2	2
The Netherlands	0	0	0	1	1
USA	0	0	1	0	1
Total	3	1	7	19	30

Results regarding this section can be summarized in the following points:

- While the literature review has outlined that the "ambassador model" is mostly used in Sweden, as a management and decision organizational tool, data from the survey show that Ambassador Model counts 3 responds, located in Columbia and Italy. Swedish responding institutions declare to adopt in one case a mini-HTA model and in the other an HTA unit.



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- The Mini-Hta model is a flexible decision support tool, which can be used by hospital management both at a regional and at a local level when contemplating the introduction of new health technology. Although this model has been developed by the Danish Centre for Evaluation and Health Technology Assessment (DACEHTA) in cooperation with local HTA environments, the Danish HCOs enrolled in the survey answered that they adopted an HTA unit model.
- The prevailing model is the ‘HTA unit’. It is reported by 63% of responders. This organizational model is spread across the different countries and it is followed by the ‘Internal Committee’ model, which is present in 23% of the responding institutions.

Table 6 shows the association between the “organization profile” and the “organizational complexity” dimension. The ‘HTA unit’ model is the prevailing solution in particular in the case of teaching hospitals. Nine HTA units are active within teaching hospitals (47% of the established units). Surveyed HCOs seem to prefer more complex organizational solutions (26 out of 30) where structured HTA units or committees get the responsibility for performing HTA processes.

Table 6. Organization profile and organizational complexity

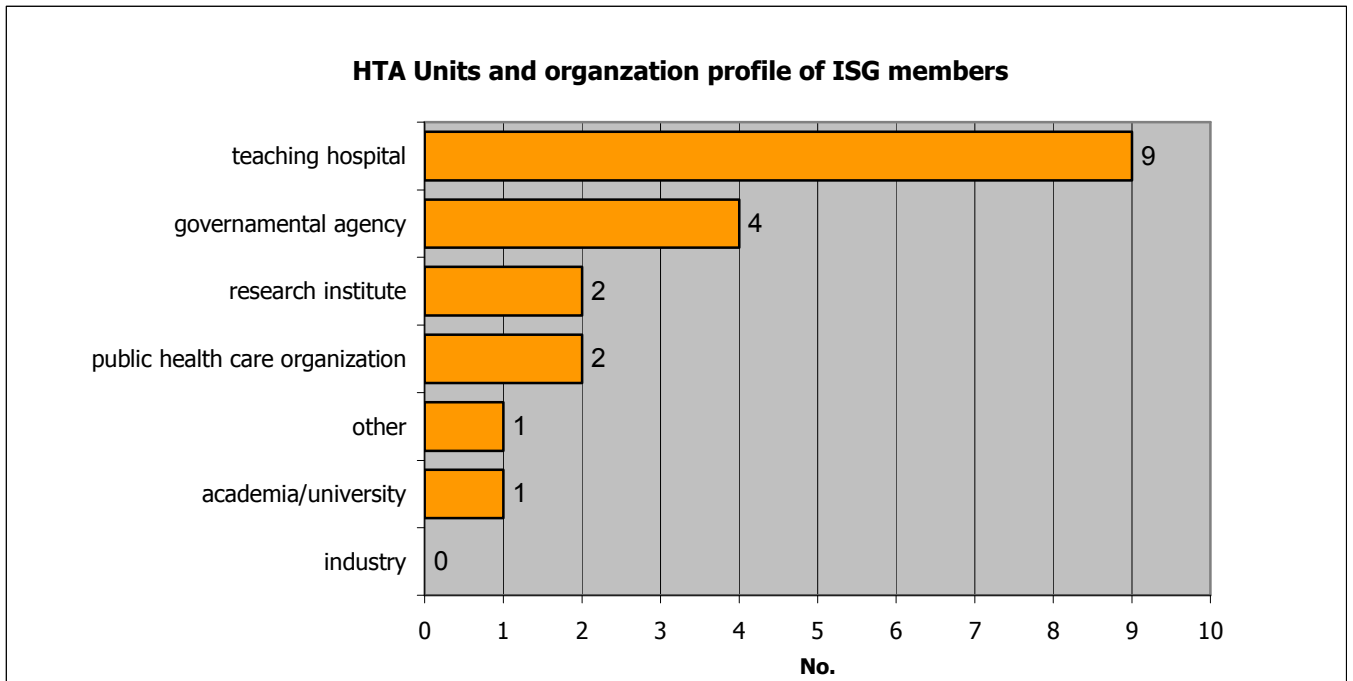
Organization profile	Organizational complexity				Total
	High		Low		
	Team-group-unit		Individual		
	Internal Committee	HTA unit	Ambassador Model	Mini HTA	
Governmental agency	1	4	1	0	6
Academia/University	0	1	2	0	3
Public Health Care Organization	2	2	0	0	4
Teaching hospital	3	9	0	1	13
Research institution	0	2	0	0	2
Industry	1	0	0	0	1
Other	0	1	0	0	1
Total	7	19	3	1	30

Errore. Il collegamento non è valido. Since HTA unit is the most spread organizational model to perform HTA at HCOs level, the attention was focused on the organizational profile of HCOs where HTA unit has been established to implement HTA approach. Graph 4 represents the organizational profile, according to it, 9 HTA unit (47% of total Units) operates in a Teaching Hospital.



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Graph 4. Organization Profile of ISG members with a HTA unit



Regarding the mission of HTA activity within hospitals and HCOs, each institution was asked to choose among following options:

- HTA is mainly used to inform clinical practice or
- HTA is mainly used to support managerial decision making or
- HTA is used to both support clinical practice and managerial decision making

Collected data show that the majority of HCOs (76%) performs HTA in order to support both clinical practice and managerial decision-making (Table 7). There is no relation between mission and organizational complexity since both the majority of “Low organizational complexity” HTA models (67%) and the majority of “High organizational complexity” HTA models (77%) are associated with the same mission.

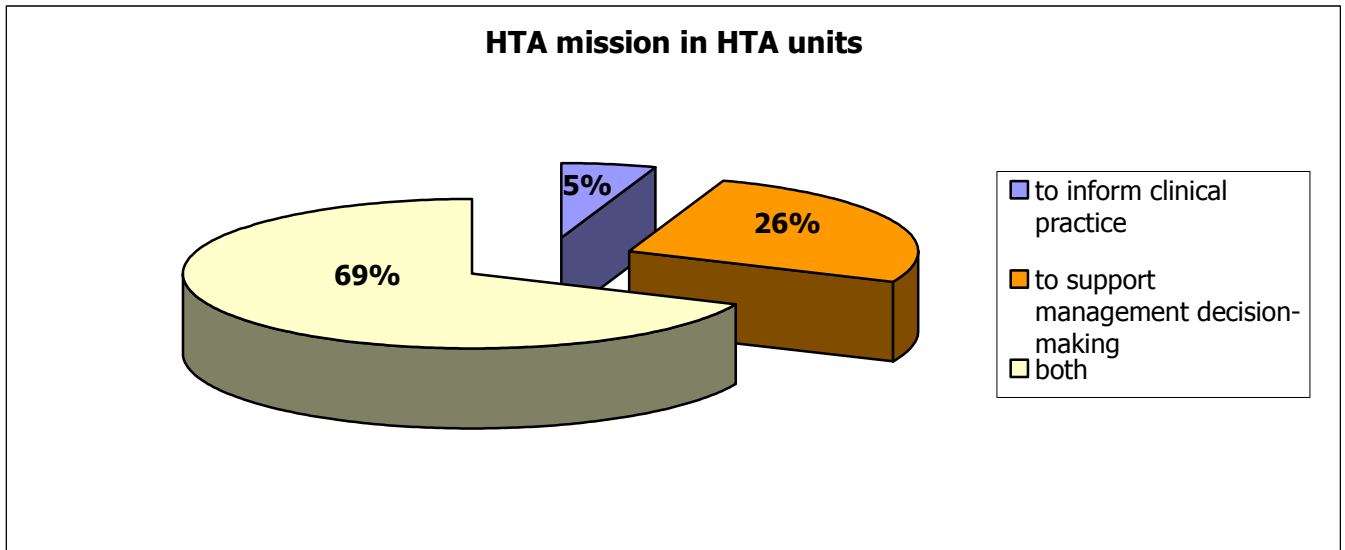
Table 7. Mission and organizational complexity

Mission		Organizational complexity				Total
		High Team-group-unit		Low Individual		
		Internal Committee	HTA unit	Ambassador Model	Mini HTA	
Only	Informing clinical practice	0	1	1	0	2
	Supporting decision making process	0	5	0	0	5
Both	Informing clinical practice and supporting decision making process	7	13	1	1	22
Total		7	19	2	1	29

Regarding HTA units is evident that they are active to support both clinical practice and managerial decision making. This condition is reported in 13 out of 19 cases (69%) (See Graph 5) .



Graph5. HTA mission in HTA units



All Internal Committees (7 cases according to Table 7) and the only Mini-HTA declare to pursue both activities. Institutions that declared to be coherent with the “Ambassador Model” just in one case attribute are active in producing information to support clinical practice and managerial decision making.

6.3 SECTION III : Competences and activities

The objective of this section is to analyze different competences involved in hospital HTA activities and explore the kind of output produced.

The following table (Table 8) reports the competences (epidemiologist, health economist etc.) operating in each organization. It also specifies the frequency of full time or part time or consultant contract arrangement adopted.

Table 8. Competences performing HB-HTA ISG members and contract arrangements

	Organization with	% full time	% part time	% consulting
Epidemiologist	18	27.8	55.6	16.7
Health economist	20	45.0	15.0	40.0
Biostatistician	13	15.4	30.8	53.8
Information specialist	16	37.5	31.3	31.3
Biomedical engineer	16	50.0	18.8	31.3
Sociologist	5	60.0	0.0	40.0
Clinician	27	29.6	48.1	22.2
Ethicist	9	11.1	0.0	88.9
Public health specialist	15	40.0	40.0	20.0
Management	22	40.9	36.4	22.7
Other:	14	50.0	28.6	21.4
Nurse, Pharmacist, Patient Advocate, Psychologist, Research assistant, Risk Manager				



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Data related to competences involved in HTA hospital activities are reported in the graph 6.

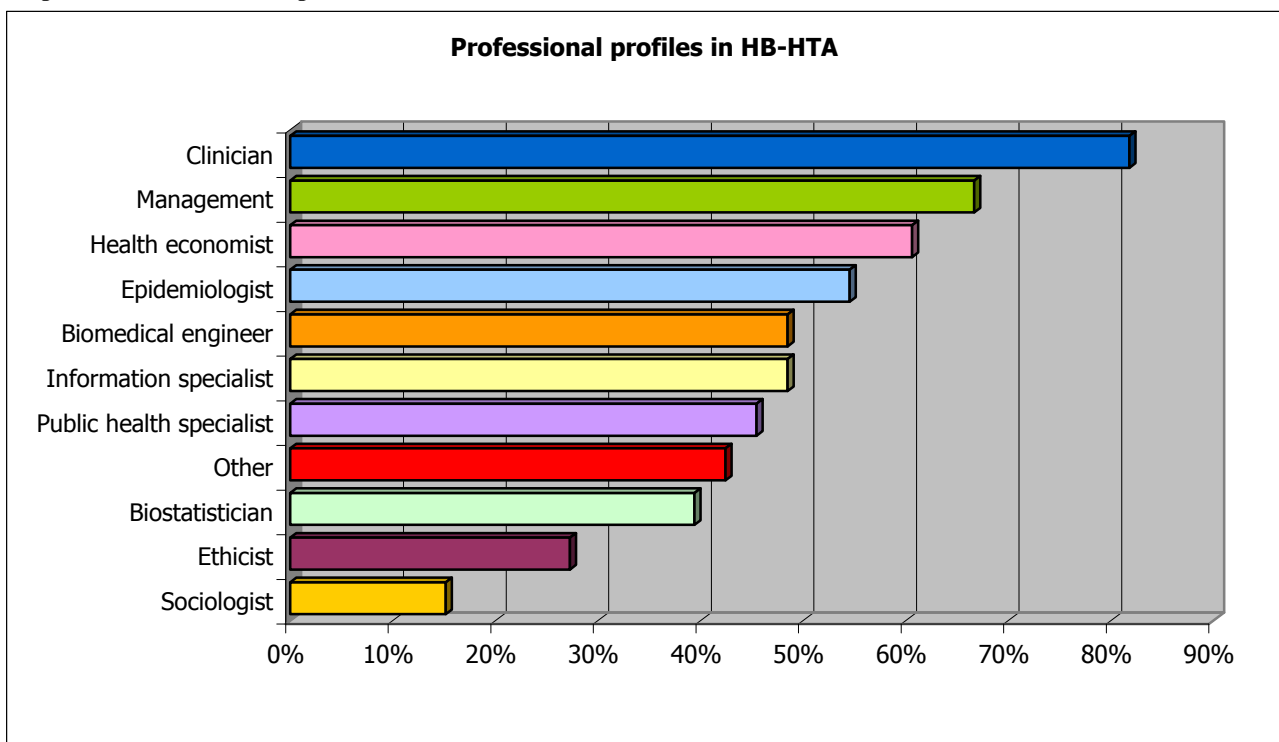
Most common professional competences present in surveyed HB-HTA functions are:

- Clinicians, available in 27 cases out of 33 (83%). They are mainly available on a part time (48%) basis;
- Managers (67% of responders) with a prevalence of full time contracts;
- Health economist, mainly available at a full time basis or as consultants.

Sociologists and ethicists instead, numerically are a marginal category.

The item “other” comprises the following competences: nurse, pharmacist, patient advocates, psychologist, research assistance, risk manager.

Graph 6. Professional competences used in HB-HTA

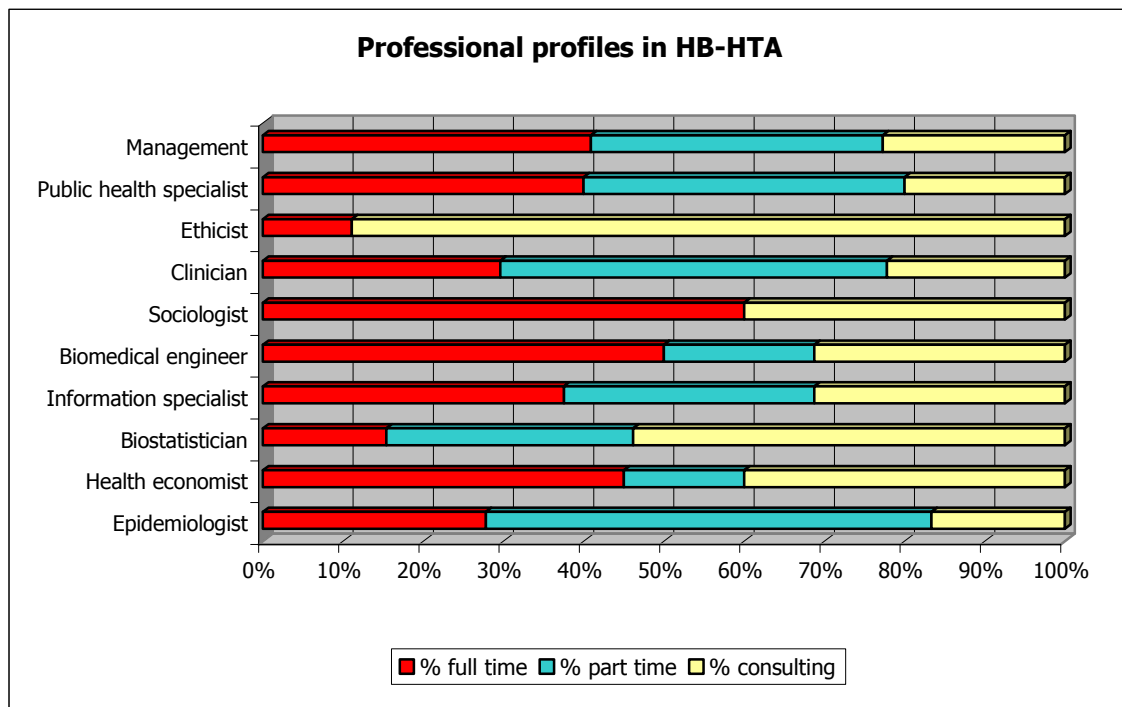


Graph 7 reports the committed time of each professional competence involved in HTA activity. Ethicists operate mainly as consultants (89%), as well as biostatisticians (54%). Health economists, biomedical engineers and managers are more easily available on a full time contract basis.



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Graph 7. Dedicated time to HTA of each competence



Technologies that are mostly assessed (number of *always* and *often* answers) by institutions are:

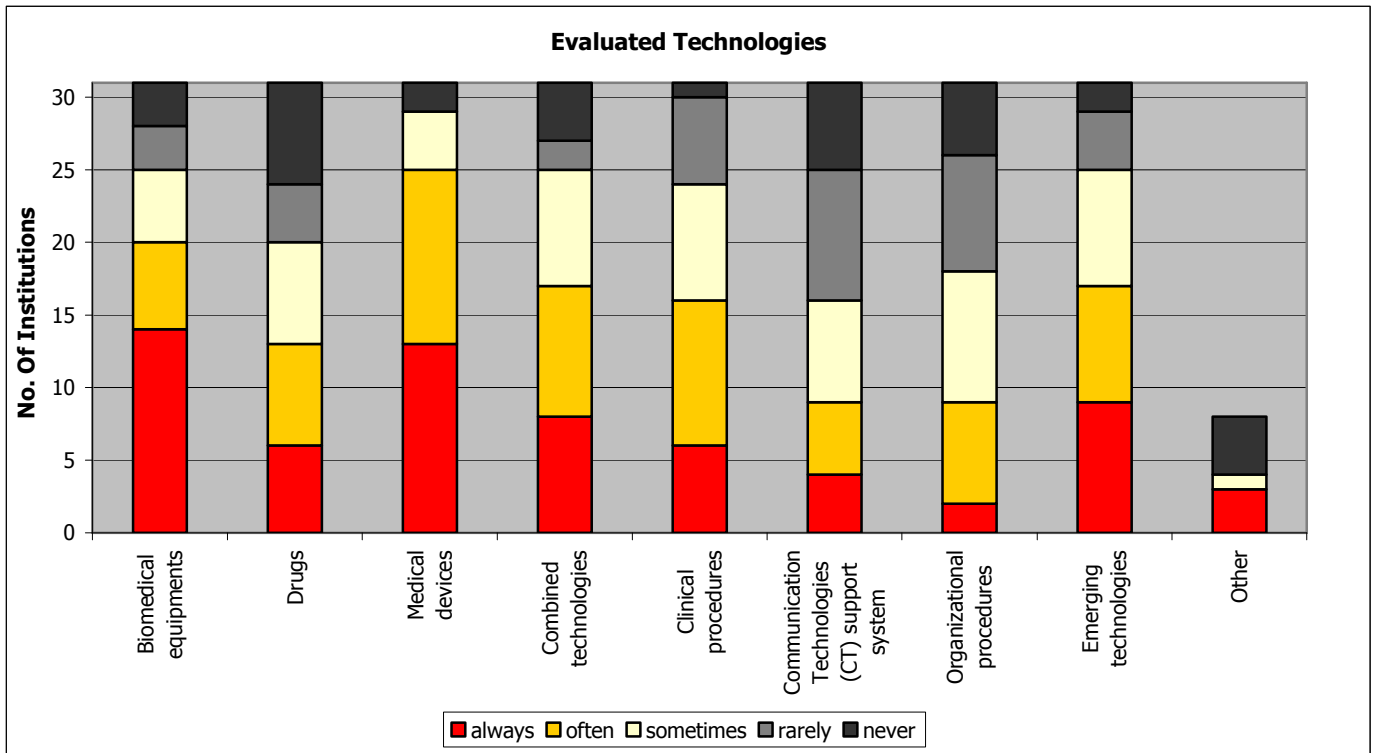
- Medical device (25)
- Biomedical equipments (20)
- Combined technologies¹, Emerging technologies (17)
- Clinical procedures (16)

Graph 8 reports detailed frequencies (always or often, sometimes, rarely or never) of technology evaluation in 31 responders. Just in 8 cases “Other technologies” are considered but only two responders specified the item “other” as diagnostic test (pathology) and laboratory tests.

¹ An example of combined technology is represented by Drug Eluting Stent where a medical devices and drugs coexist.



Graph 8. How often a given technology is evaluated



In Graph 9 is possible to appreciate the kind of dimensions (domains) considered in the assessment of technologies in this sample. Data are expressed as the percentage of organizations, on total survey's responders (33), that declare to consider each dimension in their assessment process.

Three dimensions are commonly assessed (above 80% of responders):

- Safety
- Organizational impact
- Efficacy.

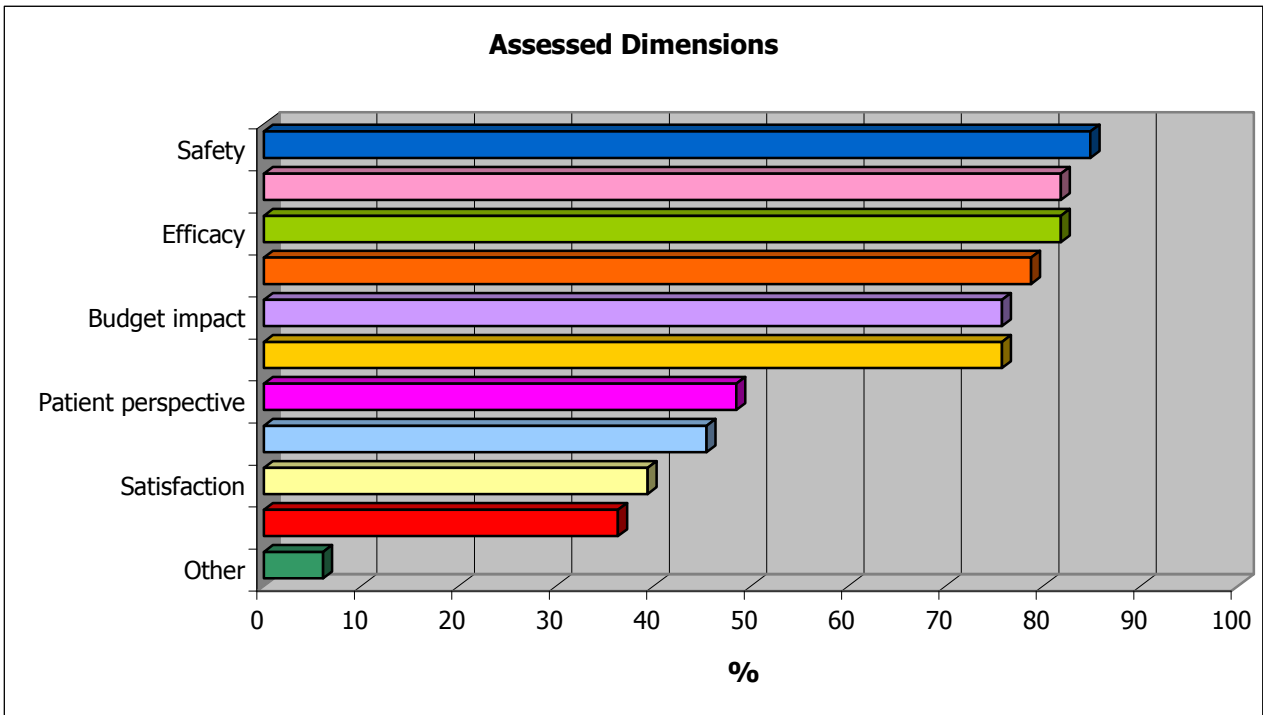
Four dimensions are assessed by less than 50% of responders:

- Technical productivity
- Satisfaction
- Ethical issues
- Patient perspective.

The item "other" was specified by one responder as environmental.



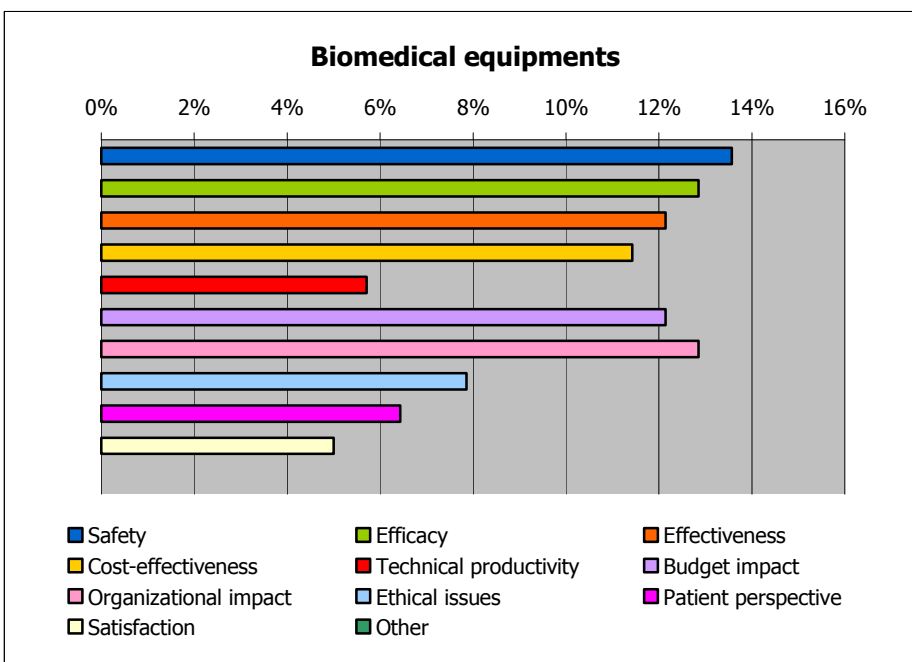
Graph 9. Assessed Dimensions



A deeper analysis on activities performed was carried out, based on the variability of assessed dimensions in relation to each studied technology.

This analysis was focused on the organizations assessing specific technologies (biomedical instruments, medical devices, etc) with a reported frequency “often” OR “always” (Graph 10).

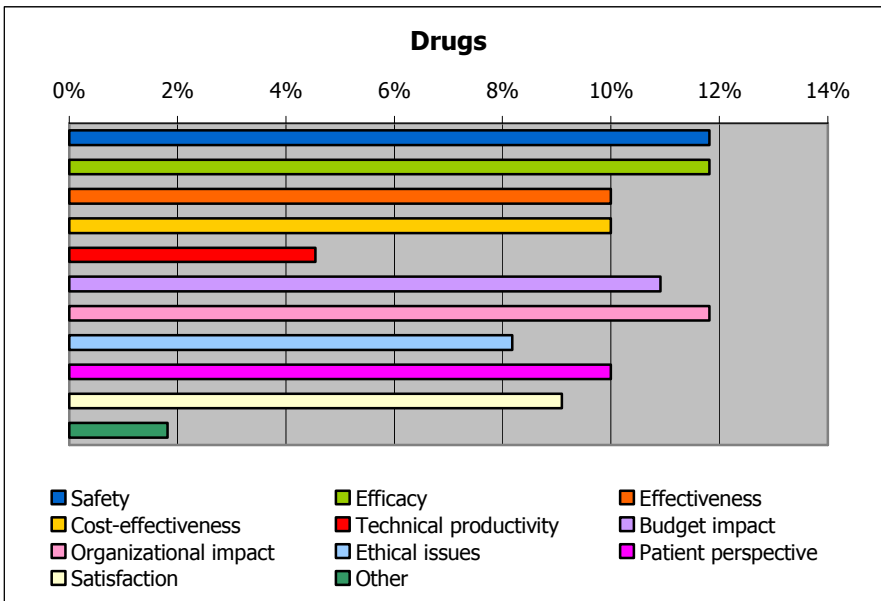
Graph 10. Assessed dimensions for each health technology



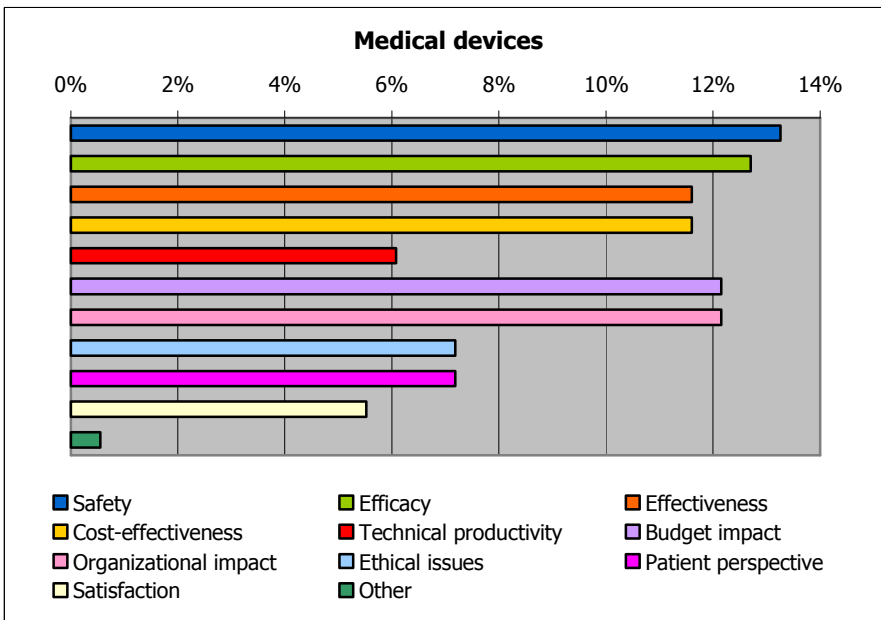
For biomedical equipment the attention is focused on safety, organizational impact and efficacy. Satisfaction and technical productivity instead are rarely considered.



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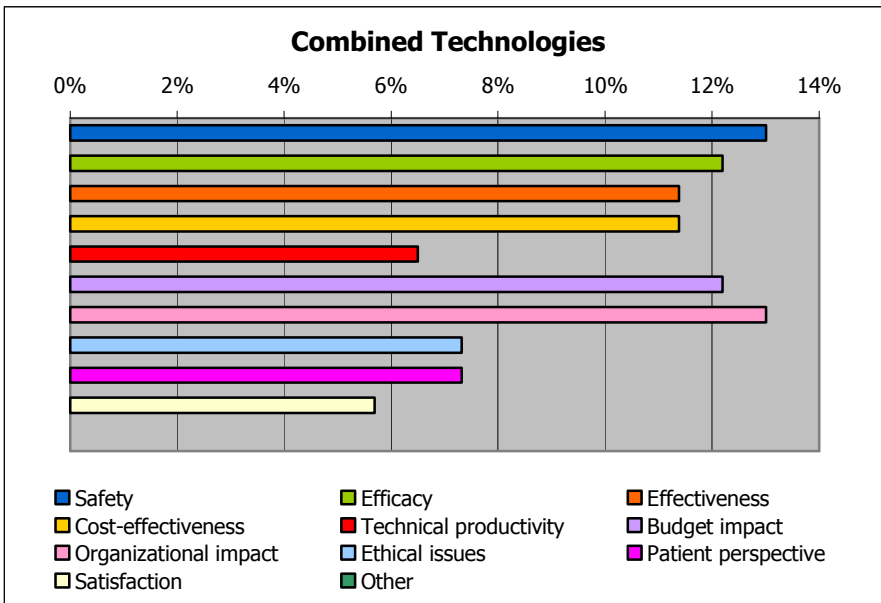
For drugs the attention is focused on safety, efficacy and organizational impact. Satisfaction plays a non marginal role. A neglected dimension is technical productivity.



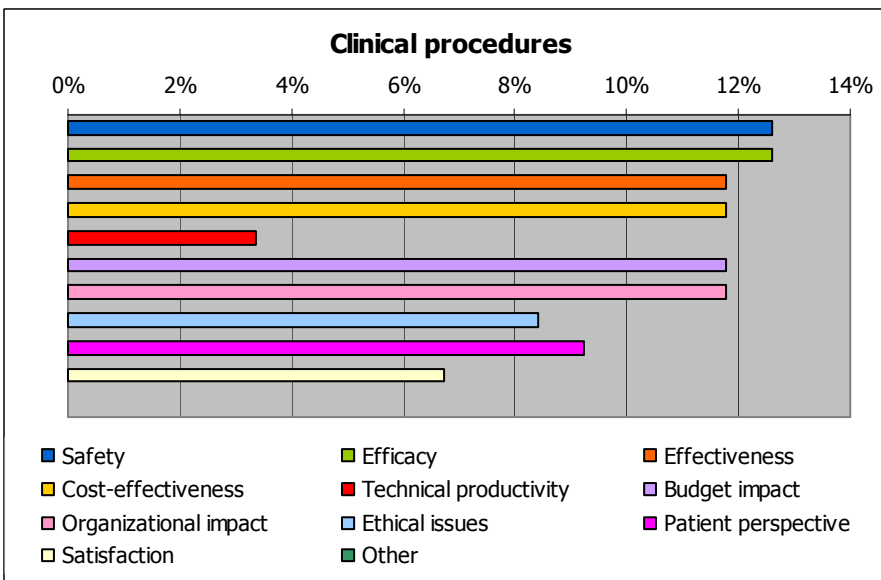
Likewise, for medical devices, the most common dimensions are safety, efficacy and organizational impact. Greater attention is paid also to budget impact. Again technical productivity is rarely assessed, as well as patient satisfaction.



Interest Sub-Group Hospital Based HTA



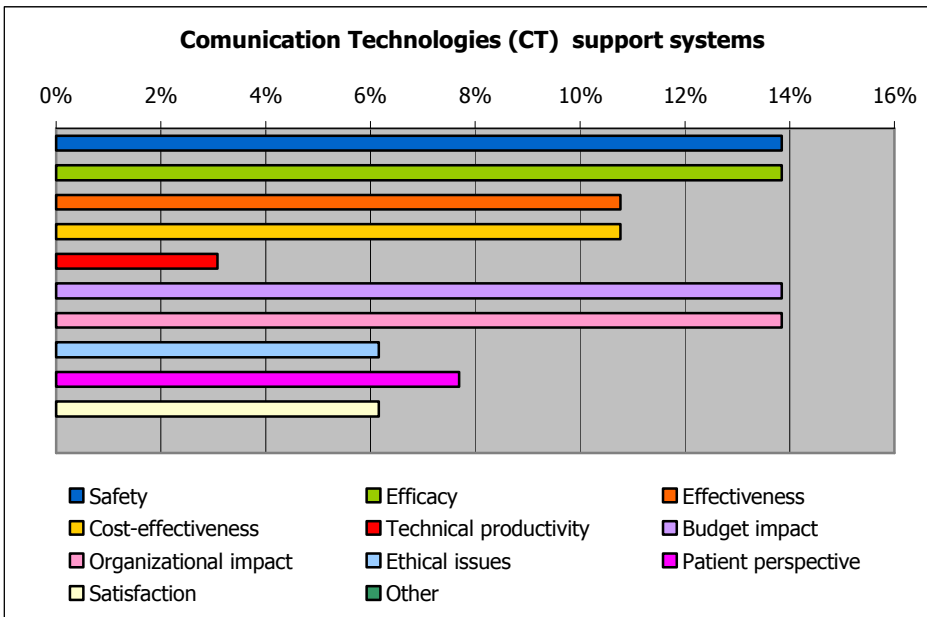
Safety, organizational impact and efficacy are evaluated most frequently. Technological productivity, compared to other technologies, is taken in higher account for combined technologies.



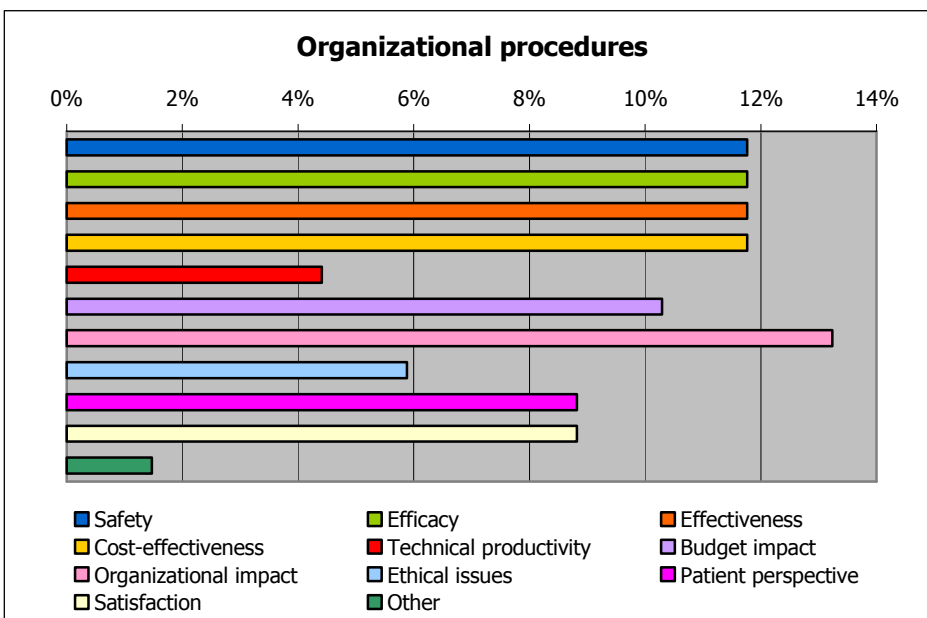
For clinical procedures the most distinguished result is the lower value given to the technological productivity. Furthermore, safety and efficacy are followed by effectiveness, cost-effectiveness, budget and organizational impact dimensions.



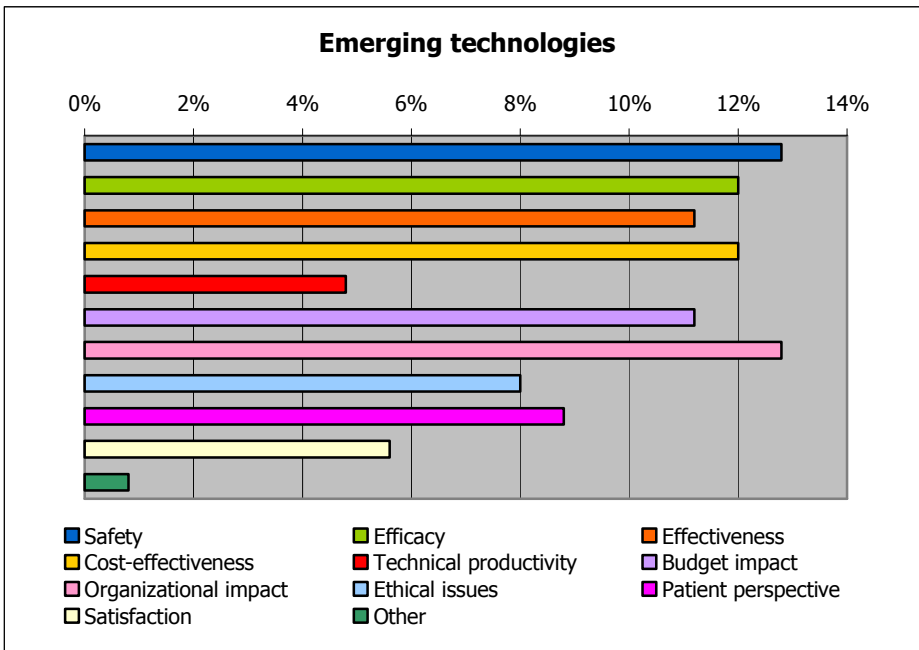
Interest Sub-Group Hospital Based HTA



Safety, efficacy, budget and organizational impact are on the same level of importance. The most neglected dimension is again technological productivity. Ethical issues and satisfaction are at the same level of diffusion.



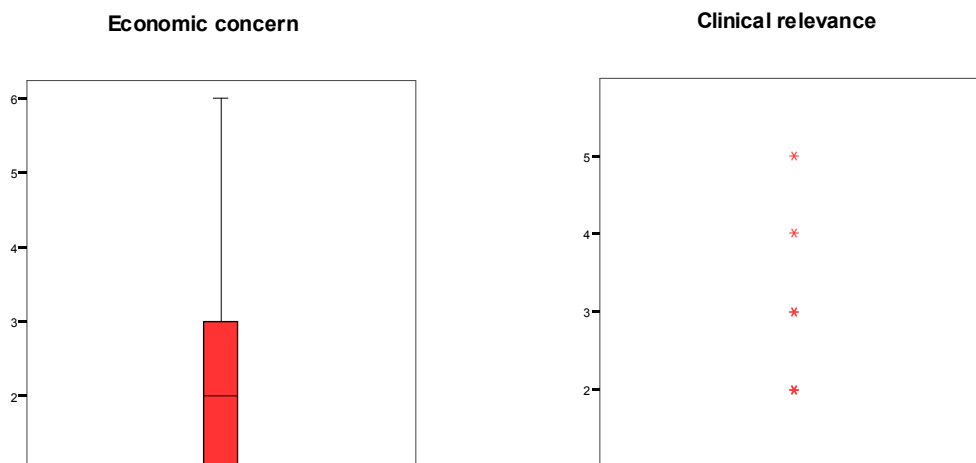
For organizational procedures a dominant role is played by the organizational impact dimension. A secondary role is assigned to safety, efficacy, effectiveness, and cost-effectiveness. The less assessed dimensions are technological productivity and ethical issues.



Finally for emerging technologies, again safety and organizational impact are commonly assessed, while technological productivity and satisfaction are neglected.

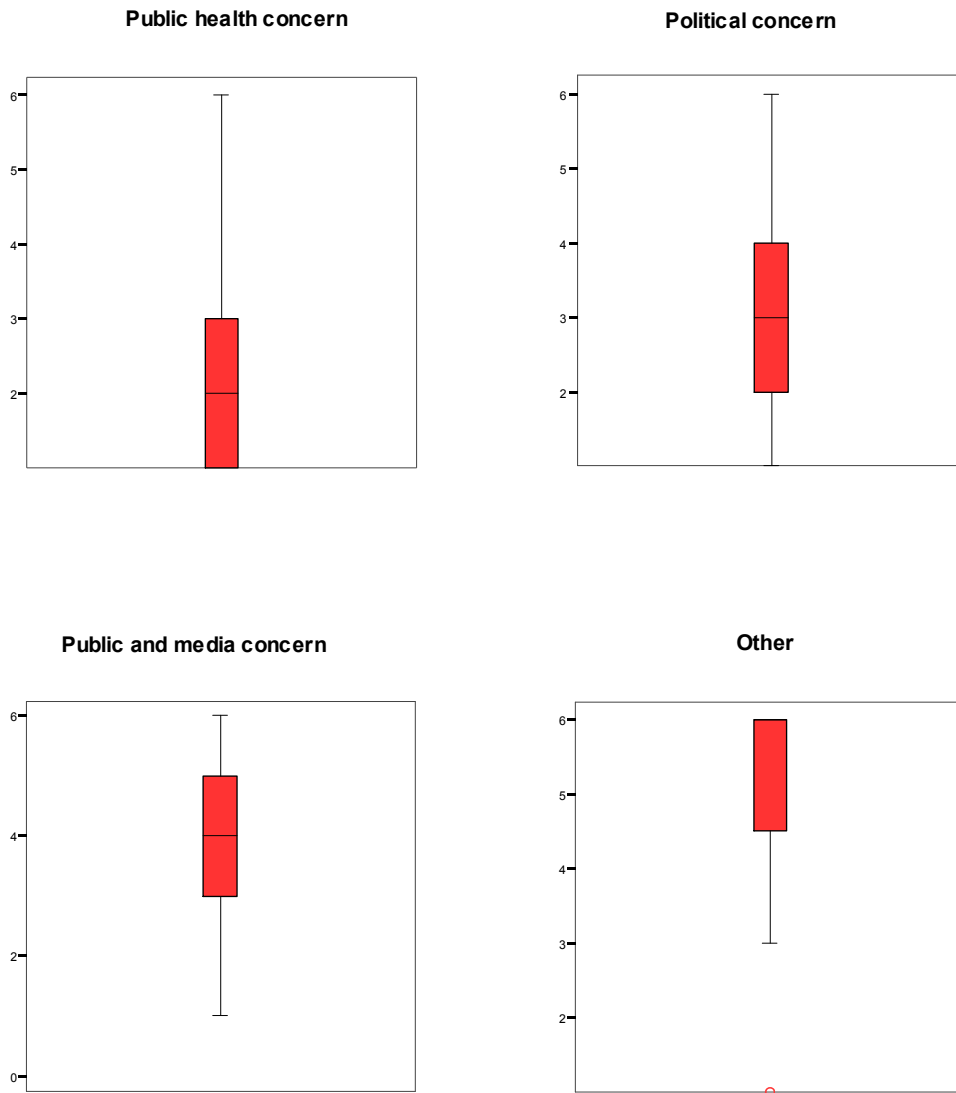
Another area of analysis was related to the **prioritization criteria** for HTA activities. Prioritization criteria represent a critical point in the organization of HTA process. Each responder was asked to rank the prioritization criteria, according to the relevance, from 1 (most relevant) to 6 (less relevant). Graph 11 reports the collected results through a Box-Whisker diagram.

Graph 11. Boxplot of prioritization criteria relevance in HB-HTA





Interest Sub-Group Hospital Based HTA



The following table summarizes the data represented in Graph 11. The most relevant criteria is clinical relevance, followed by economic and public health concern. Less relevant criteria are other (legal, ethical, organizational that were specified by a responder) and political concern.

Table 9. Prioritization criteria relevance

Criteria to prioritize HTA activities	Relevance (1=most relevant, 6=less relevant)		
	Median	25° percentile	75° percentile
Economic concern	2	1	3
Clinic relevance	1	1	1
Public health concern	2	1	3
Political concern	3	2	4
Public and media concern	4	3	5
Other	6	3	6



Interest Sub-Group Hospital Based HTA

Finally, HTA production in 2006 was investigated. Each organization was asked to report the number of documents produced according to the following list of different outputs:

- **Assessment reports²**: full comprehensive reports resulting from the process of assessment, based on systematic scientific evidence review, focused on aspects such as efficacy, safety, effectiveness and efficiency of medical technologies, designed to adapt the assessment to the analyzed health scenario and depending on the requirements of the commissioning organization.
- **Technical queries¹**: short reports generated by assessment processes when the commissioning or requesting party needs to obtain an answer in a short time.
- **Quick response service¹**: brief reports which respond quickly and concisely to very specific queries.
- **Issues in Emerging technologies³**: bulletins highlighting technologies that are not widely spread in the country.
- **Pre-assessment²**: based on a limited literature review.
- **Biomedical equipments investment plan**: annual or long term Investment Plan for biomedical equipments, based on HTA principles; it also establishes internal allocation of technological resources.
- **Clinical practice guidelines**.

The most common produced outputs in 2006 (Table 10) were:

- assessment reports (a mean of 6 reports was produced by 19 institutions);
- technical queries, (a mean of 22 documents produced by 13 institutions , but with a strong outlier of 206 queries produced in 2006)
- quick response service, produced by 13 members with an annual mean of 8.6.

Other outputs are less commonly produced (lower values in column ‘Yes’). Clinical practice guidelines were realized by 9 members with an high productivity (a mean of 17 guidelines and a median of 4 in 2006). .

Table 10. HTA output produced in 2006

Production of outputs	Number of organization producing outputs	Number of outputs produced in 2006			
		Mean	Median	Minimum	Maximum
Assessment reports	19	5.6	5	0	17
Technical queries	13	22.0	5	0	206
Quick response service	13	8.6	9	0	30
Issues on emerging technologies	7	4.9	2	1	10
Pre-assessment	9	10.3	4	0	50
Biomedical equipments investment plan	8	3.6	1	1	19
Clinical practice guidelines	9	16.8	4	0	84
Others	1	1			

Graph 12 reports graphically the information on the HTA production in 2006 representing both the number of members realizing each type of output and mean number produced in a year.

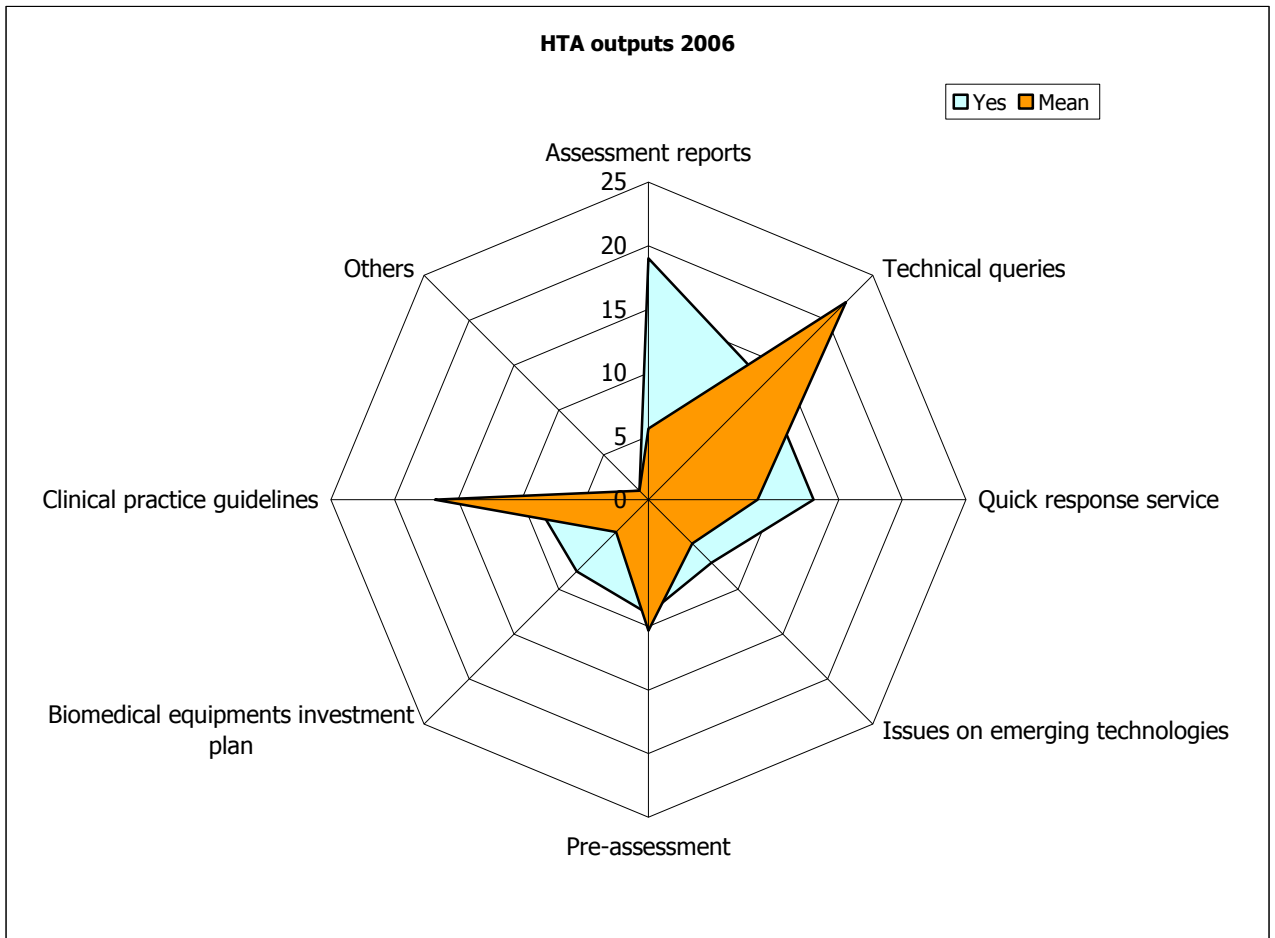
² EUnetHTA project definitions.

³ CADTH definitions.



Interest Sub-Group Hospital Based HTA

Graph 12. HTA Outputs per type and production level in 2006





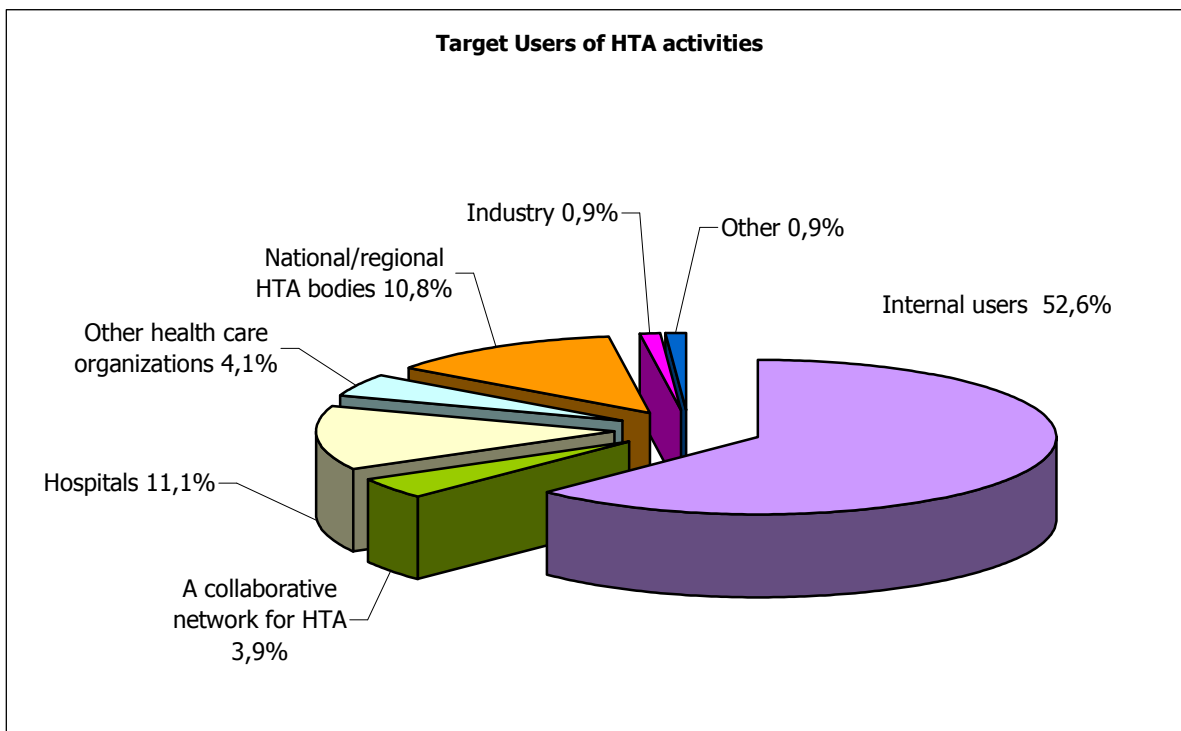
6.4 SECTION IV : Hospital HTA: training and external environment

The analysis investigated also dissemination tools, “target users”, professional training process of professionals involved in HB-HTA activities and link existing with external institutions.

“Target users” refers to the people/organizations for which the HTA activities are carried out. To identify the main target users of HTA activities, it was asked to report the relevance of a list of potential users as percentage on total users. According to data provided, internal users (clinicians/managers) were the main target users.

In Graph 13 is evident the strong relevance recognized to internal users. Indeed, in mean internal users’ relevance is 52.6%, followed by hospitals (11.1%) and national/regional HTA bodies (10.8%).

Graph 13. Main target users of HTA activities

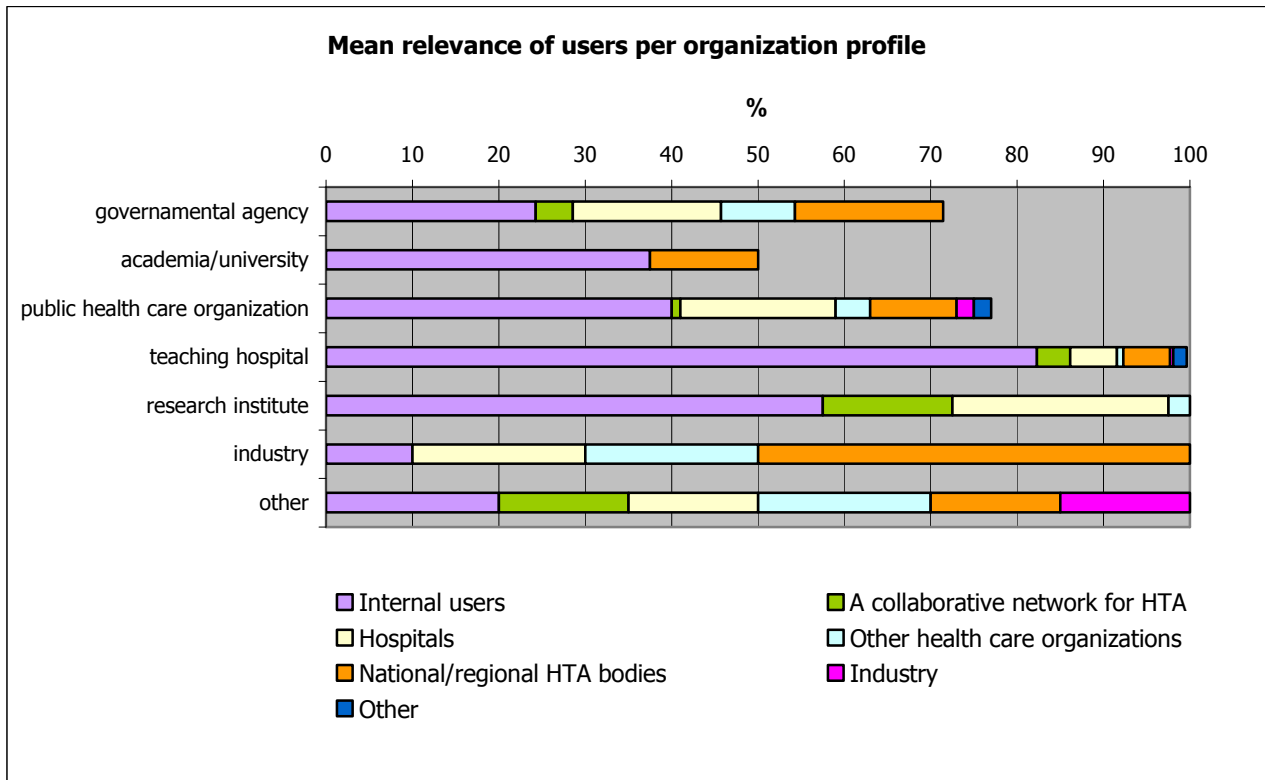


Graph 14 reports the same kind of information for each organization profile, as described in Table 2. Teaching hospitals recognize a key role to internal users (clinicians and managers), research institutions considered one of their main users the hospitals. Industry is focused on national/regional HTA bodies.



Interest Sub-Group Hospital Based HTA

Graph 14. Target user mean relevance per organization profile

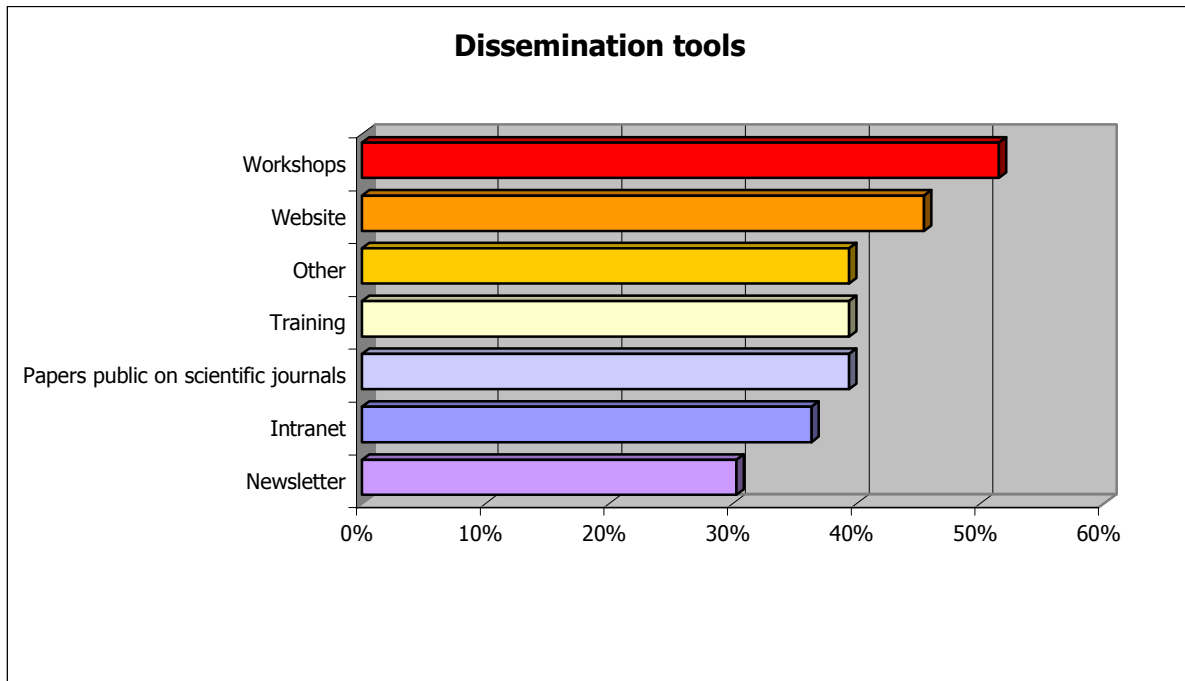


Dissemination of HTA documents was realized through different tools. The most exploited mean of dissemination (see Graph 15) are workshops, adopted by 52% (17 out of 33) of responders. Websites are used by the 45%. While newsletters are produced by 10 members of HB-HTA ISG members.

Many organizations used other tools to disseminate their knowledge not listed in the questionnaire; examples of these tools are: hardcopies of recommendations and reports; written report; appropriate committees and clinicians; monthly seminars with journalists and administration; discussions with professionals, clinicians and decision-makers; internal conferences; direct distribution of produced documents.



Graph 15. Dissemination tools



The analysis on professional training show how it plays a key role in the career path and has a special relevance in HTA.

As results in Table 11, 38.9% of the overall staff is trained.

Table 11. Trained staff

Mean	38.90%
Median	25%
Minimum	0%
Maximum	100%

Furthermore, from the survey results that 78.8% of responders organized or participated or are planning to organize or participate in HTA professional training. Of these 26 responders (Table 12), almost the 81% actively organized HTA training events.

Table 12. Role of HTA training

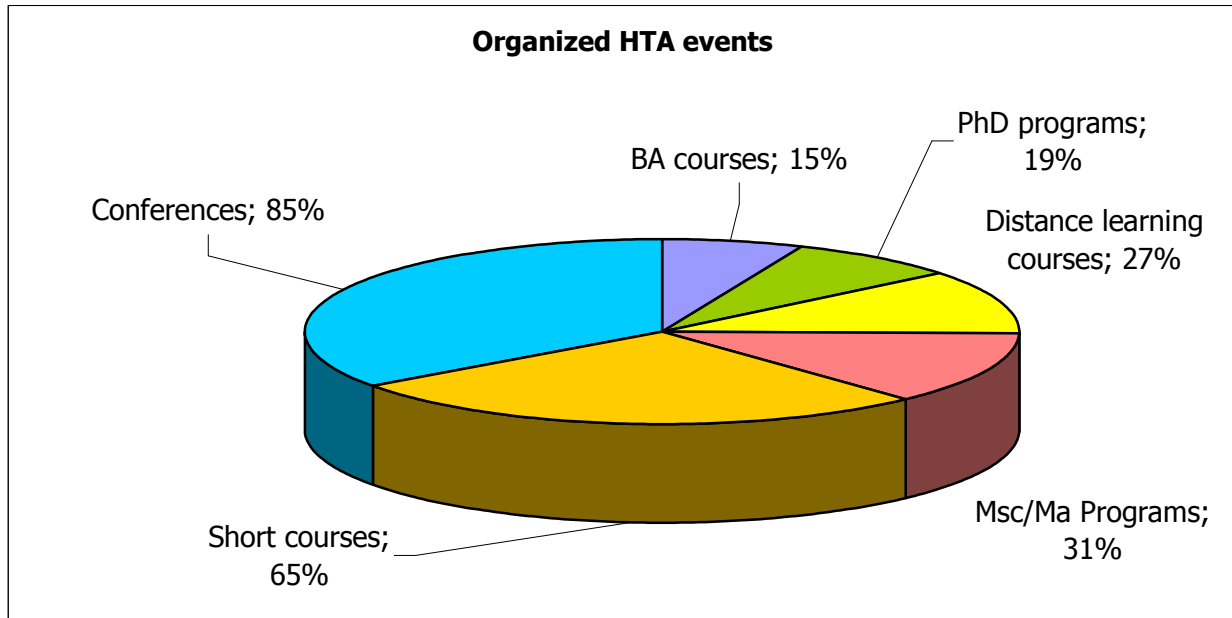
Does your organization organized or participate in HTA training activities?	No	% on 33
no	4	12.1
not yet. but they are included in the agenda	3	9.1
yes	26	78.8
of which:		% on yes
as organizer	21	80.8
as attendant	15	57.7



Interest Sub-Group Hospital Based HTA

Graph 16 represents the type of HTA training events that ISG members organize. The most preferred solutions are conferences and short courses, organized by respectively the 85% and 65% of those members actively involved in HTA events.

Graph 16. Organized HTA training events



Finally, it is also possible to identify the other organizations with whom HB-HTA ISG members are in contact. Table 13 provides a detailed vision on these links and connections. The item “other” was specified only by one responder (on 3) as industry, consumer organizations. Performing HTA activities determines contacts with university (30/33 members), national/regional HTA bodies (27/33) and health policy institutions (25).

The links could have different nature; in particular they could be:

- Formal: links are based on written agreement.
- Informal: links are not based on written agreement.
- Permanent: continuing links, with sharing of competences, tasks and knowledge in the assessment processes.
- Temporary: project based links.

Therefore the HCOs were also asked to describe the nature of their links with the different kind of organizations listed.

Table 13. Links with other organizations

	No.	Yes							
		Formal	Informal	Both	NA	Permanent	Temporary	Both	NA
National/regional HTA bodies	27	13	10	3	1	14	4	2	7
Research centres	23	7	12	2	2	8	8		7
University-faculties	30	11	17	1	1	10	8		12
Other HCOs	21	5	11	2	3	5	7	1	8
Health Policy Institutions	25	13	10	1	1	6	7		12
Other	3	1	1	1		2			1

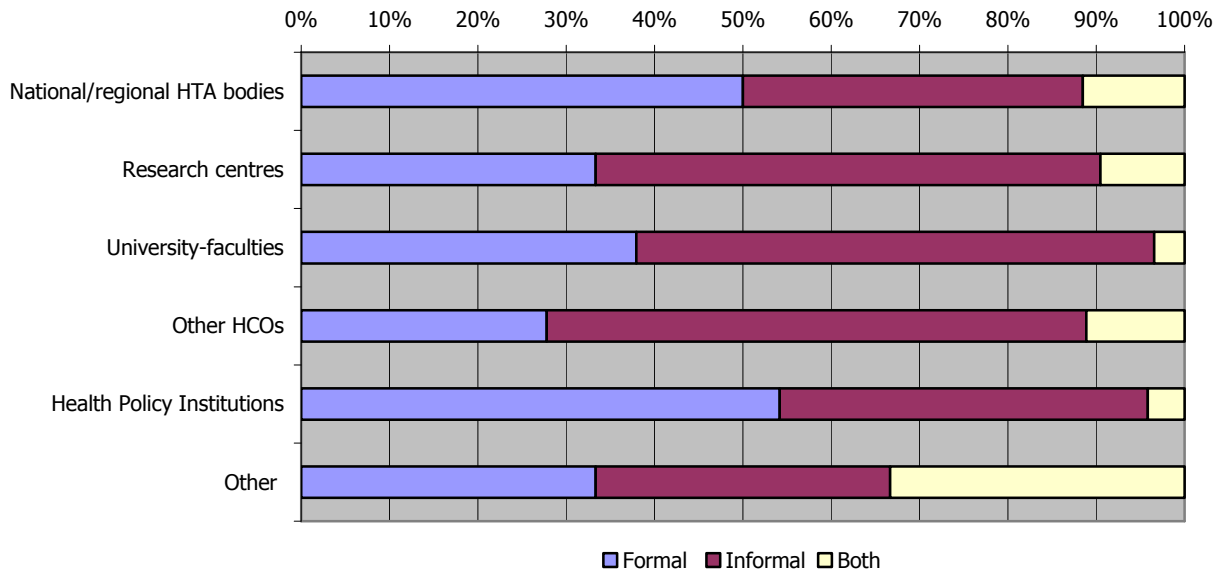


Interest Sub-Group Hospital Based HTA

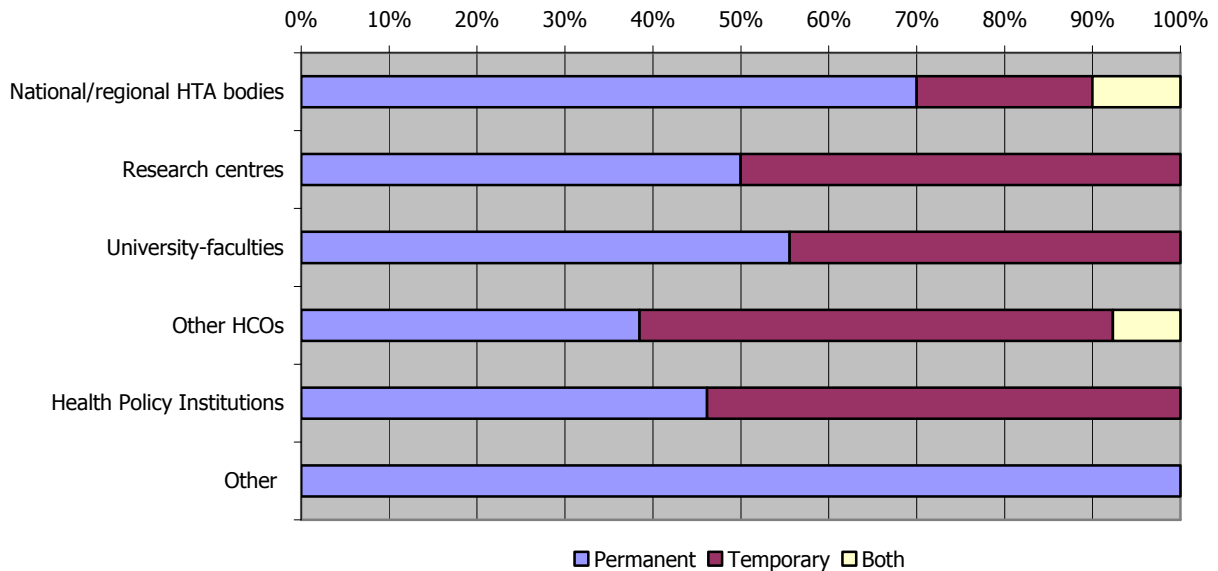
Not for all these connections data are available on the type of links actually running (Table 13, NA column), but a clear distribution per institutions and type of relations is possible. Links with national/regional HTA bodies and health policy institutions tend to be mainly formal, while with research centers and other HCOs are mainly informal (Graph 17).

With national/regional HTA bodies permanent contacts are prevailing (Graph 18), while with other HCOs and research centers there is an equilibrium between permanent and temporary connections.

Graph 17. Formal and informal links



Graph 18. Temporary and permanent connections





7. Discussion and Conclusion

HTA activities are mainly performed in Teaching Hospital (43.3% of responders) with a double perspective: to produce information and to inform clinical practice(76%).

The HTA unit is the most common organizational model adopted (63% of responders).

The key professional profiles are clinicians, managers and health economists, with different contract arrangements for each profile.

Mainly medical device, biomedical equipments, combined and emerging technologies and clinical procedures are evaluate by members, focusing the assessment on the safety, organizational impact and efficacy. While to prioritize among activities and technologies the clinical relevance represents the first concern.

Performed activities are summarized mainly in assessment reports, technical queries and quick response services and disseminate through workshops and websites.

The main target users are internal users (52.6%), hospitals (11.1%) and national/regional HTA bodies (10.8%). Different organization profiles have different target users.

About 40% of the personnel is trained and training is directly organized (79%) in form of conferences (85%) and short courses (65%).

Finally, connections with external bodies are managed, both formal (health policy institutions and national/regional HTA bodies) and informal (other HCOs). These links could be permanent (national/regional HTA bodies) or temporary (other HCOs).

The survey among the Hospital Based ISG members provides an overall picture on how HTA is performed in the health care organization in terms of institutions profile, HTA organizational model, involved competences and assessed technologies.

The double nature of HTA mission result widely accepted, given that 76% of members recognize it as both production of information and information of clinical practice. The strong link with the clinical dimension is further proved by its key role among prioritization criteria and in terms of professional competences involved in HTA.

Hospital based HTA is not focused on a limited set of technologies. Then, it adopts a multidimensional approach in the assessment process, mainly focusing on safety, organizational impact and efficacy but not completely forgetting other aspects.

HTA bodies actively promoted training organizing events such conferences and short courses.

Finally, a deep network of contacts with external institutions is maintained.

Further studies could be useful in order to analyze and standardize HTA method applied in Health Care Organization.

These final remarks could be biased by the selection criteria of institutions enrolled in the survey. In fact the questionnaire has been submitted only to those organizations member of ISG – Hospital Based HTA which couldn't cover all the organization where Hospital based HTA is performed.

In order to overcome these limitations could be useful:

1. To enlarge the survey submitting the questionnaire to other hospitals not listed among ISG HB-HTA group, that are experiencing hospital based HTA activities;
2. To update the survey in order to figure out how decision-making processes are developed within the organizations – e.g who decides what to do and how to do it, which interactions are established with other organizational committees.

The survey performed was the first experience that investigated the worldwide Hospital Based HTA activities.

Despite limitations previously mentioned, this initiative was a very positive starting point in order to establish collaboration among peers HTA institutions to better understand and harmonize hospital based HTA practice.



Acknowledgments

The authors would like to thank the Board of Directors and the President of Health Technology Assessment International for their continuous support from the establishment of the Interest Sub-Group Hospital Based HTA to the diffusion of the results of the first worldwide survey on Hospital Based HTA. In particular, on behalf of HBHTA ISG's members, the authors thank to HTAi for financial support provided to print this booklet.

The authors would like to thank all ISG's members for their support, in particular those who kindly replied to this survey. .



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11. Luce, B.R., Brown, R.E. (1995). The use of technology assessment by hospitals, health maintenance organizations, and third-party payers in the United States. *Int J Technol Assess Health Care, Winter; 11(1):79-92*.
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19. Zuellig MC. Committed to innovation: the Swiss Network of Health Technology Assessment (SNHTA). *Ital J Pub Health*. 2005; 2: (Suppl 1): 39



APPENDIX 1 – List of HB-HTA ISG's organizations members

Organization	City	Country
		Argentina
Head-Medicine Program Southern Health Victoria Australia	Melbourne	Australia
ASERNIP-S, Australia	Melbourne	Australia
Institute of Technology Assessment, Austrian Academy of Sciences	Wien	Austria
Farmacêutica- Gerente de Risco Instituto da Criança HCFMUSP	Sao Paulo	Brasil
Brazilian Health Suveillance agency - ANVISA	Brasilia	Brasil
University of Montreal	Montreal (Quebec)	Canada
McGill & University of Montreal - CHUM / MUHC Technology Assessment Unit	Montreal (Quebec)	Canada
AETMIS - Agence d'évaluation des technologies et des modes d'intervention en santé (AETMIS)	Montréal (Quebec)	Canada
Hospital St-francois d'Assise, CHUQ	Quebec	Canada
High Impact Technology Evaluation Centre (HiTEC) London Health Sciences Centre	London (Ontario)	Canada
Hayes Inc.	Mississauga (Ontario)	Canada
master ulysses's student	Montreal (Quebec)	Canada
CHUQ	Québec (Quebec)	Canada
3rd Edition Master Ulysses's student	Montreal (Quebec)	Canada
Levitra Andean Region - Bayer- HeathCare	Bogotá	Colombia
3rd Edition Master Ulysses's student		Colombia
DACEHTA - Danish Centre for Evaluation and HTA	Copenhagen	Denmark
Odense University Hospital, Department of Research and HTA	Odense	Denmark
HTA-unit, Århus University Hospital Department of Public Health	Århus	Denmark
Fédération Hospitalière de France - FHF	Paris	France
CEDIT - Comité d'Evaluation et de Diffusion des Innovations Technologiques	Paris	France
Ethicon Endo Surgery - European Headquarter	Norderstedt	Germany
Policlinico Niguarda	Milan	Italy
Celgene Italia	Milan	Italy
IRCCS Ospedale Pediatrico Bambino Gesù	Rome	Italy
A.O.U. Ospedali Riuniti di Ancona	Ancona	Italy
Ospedale Universitario di Padova	Padova	Italy
Agenzia Nazionale per i Servizi Sanitari Regionali	Rome	Italy
ASL Roma E	Rome	Italy
Azienda Provinciale per i Servizi Sanitari	Trento	Italy



Interest Sub-Group Hospital Based HTA

Ospedale San Matteo Pavia	Pavia	Italy
HTA Unit - University Hospital "A. Gemelli" - Università Cattolica del Sacro Cuore	Rome	Italy
Università di Pavia	Pavia	Italy
ISS	Rome	Italy
Azienda Sanitaria di Bressanone	Bressanone	Italy
Università di Trento	Trento	Italy
Ethicom Endosurgery	Rome	Italy
Azienda Ospedaliera San Filippo Neri	Rome	Italy
ASL Firenze	Firenze	Italy
Centro Nacional de Excelencia Tecnológica en Salud - CENETEC	Colonia Juárez	Mexico
Auckland District Health Board	Auckland	New Zealand
University medical center Groningen	Groningen	The Netherlands
Agency for Health Technology Assessment in Poland AHTAPol		Poland
AETSA - Andalusian Agency for Health Technology Assessment	Seville	Spain
University Hospital in Göteborg	Göteborg	Sweden
SBU - Swedish Council on Technology Assessment in Health Care	Stockholm	Sweden
Swiss Network for Health Technology Assessment	Berne	Switzerland
University Hospital of Lausanne in French: Centre Universitaire Hospitalier Vaudois / CHUV	Lausanne	Switzerland
Massachusetts General Hospital	Boston	USA



APPENDIX 2 – List of responders (in alphabetical order)

ANVISA - National Health Surveillance Agency	
City	Brasilia
Country	Brazil
Respondent	Manager
Web-site	www.anvisa.gov.br

ASERNIP-S - Australian Safety and Efficacy Register of New Interventional Procedures - Surgical	
City	Stepney
Country	Australia
Respondent	Manager
Web-site	www.surgeons.org/asernip-s

ASL Firenze	
City	Florence
Country	Italy
Respondent	Medical Director
Web-site	http://www.asl.toscana.it/

Auckland District Health Board	
City	Auckland
Country	New Zealand
Respondent	Clinical Practice Committee Manager
Web-site	www.adhb.govt.nz

Azienda Ospedaliera Università di Padova	
City	Padua
Country	Italy
Respondent	Medical Director
Web-site	www.sanita.padova.it

Azienda Provinciale per i Servizi Sanitari di Trento	
City	Trento
Country	Italy
Respondent	Director of Quality improvement Unit
Web-site	www.apss.tn.it

Azienda Sanitaria Locale Roma E	
City	Rome
Country	Italy
Respondent	Risk Manager
Web-site	www.asl-rme.it

CEDIT - Comité d'Evaluation et de Diffusion des Innovations Technologiques	
City	Paris
Country	France
Respondent	Biomedical engineer - Direction de la Politique Médicale
Web-site	http://cedit.aphp.fr/

CENETEC - Centro Nacional de Excelencia Tecnológica en Salud	
City	Mexico, DF
Country	Mexico
Respondent	Subdirectora de Evaluación Tecnológica
Web-site	www.cenetec.gob.mx

Centre Hospitalier Universitaire de Québec - Hôpital Saint-François d'Assise	
City	Québec (Québec)
Country	Canada
Respondent	Researcher
Web-site	www.crsfa.ulaval.ca



Interest Sub-Group Hospital Based HTA

CHUQ - Centre Hospitalier Universitaire de Québec	
City	Québec (Québec)
Country	Canada
Respondent	Coordinator of HTA unit
Web-site	www.chuq.qc.ca

DACEHTA - Danish Centre for Health Technology Assessment	
City	Copenhagen
Country	Denmark
Respondent	HTA adviser
Web-site	www.dacehta.dk

Ethicon Endo Surgery - European Headquarter	
City	Hamburg
Country	Germany
Respondent	Senior Health Outcome Manager
Web-site	http://www.ethiconendo.com/

HTA Unit Aarhus	
City	Aarhus
Country	Denmark
Respondent	Health Economist
Web-site	

IRCCS Ospedale Pediatrico Bambino Gesù	
City	Rome
Country	Italy
Respondent	Director of Clinical Engineering Unit
Web-site	www.ospedalebambinogesu.it

CHUV - Centre Hospitalier Universitaire Vaudois Lausanne	
City	Lausanne
Country	Switzerland
Respondent	Associate Medical Director
Web-site	www.chuv.ch

Department of Health Administration, Université de Montréal	
City	Montréal (Quebec)
Country	Canada
Respondent	Director
Web-site	http://www.mdas.umontreal.ca/

Fondazione IRCCS Policlinico San Matteo	
City	Pavia
Country	Italy
Respondent	Director of HTA unit - consultant
Web-site	www.sanmatteo.org

Instituto de Bioética - Pontificia Universidad Javeriana	
City	Bogotá, D.C.
Country	Colombia
Respondent	Researcher
Web-site	

ISS - Istituto Superiore di Sanità	
City	Rome
Country	Italy
Respondent	Researcher
Web-site	www.iss.it



Interest Sub-Group Hospital Based HTA

LBI-HTA - Ludwig Boltzmann Institute of Health Technology Assessment	
City	Wien
Country	Austria
Respondent	Director
Web-site	http://hta.lbg.ac.at/de/index.php

McGill University Health Center	
City	Montreal (Quebec)
Country	Canada
Respondent	Director
Web-site	www.mcgill.ca/tau

Odense University Hospital	
City	Odense
Country	Denmark
Respondent	Head of department for research and HTA
Web-site	www.ouh.dk

San Filippo Neri	
City	Rome
Country	Italy
Respondent	Medical Director
Web-site	www.sanfilippone.roma.it

SFPOH - Swiss Federal Office of Public Health	
City	Berne
Country	Switzerland
Respondent	Scientific collaborator
Web-site	www.bag.admin.ch

Massachusetts General Hospital	
City	Boston
Country	USA
Respondent	Sr. Project Specialist/ Assistant in Internal Medicine for Clinical Technology Assessment & Innovation
Web-site	www.massgeneral.org/

Monash Medical Centre, Southern Health	
City	Melbourne
Country	Australia
Respondent	Head, Medicine Program
Web-site	www.southernhealth.org.au/mmc.htm

Regional HTA-centre in the West Swedish health care region	
City	Goteborg
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Respondent	MD, PhD, Ass Prof, Head of HTA project
Web-site	

SBU - Swedish Council on Technology Assessment in Health	
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Respondent	Deputy director
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Interest Sub-Group Hospital Based HTA

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Respondent	Professor
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Valme University Hospital, Andalusian Health Service	
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Respondent	Head of Quality and Clinical Records Department
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UVT - Unità di Valutazione delle Tecnologie, Policlinico A. Gemelli	
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